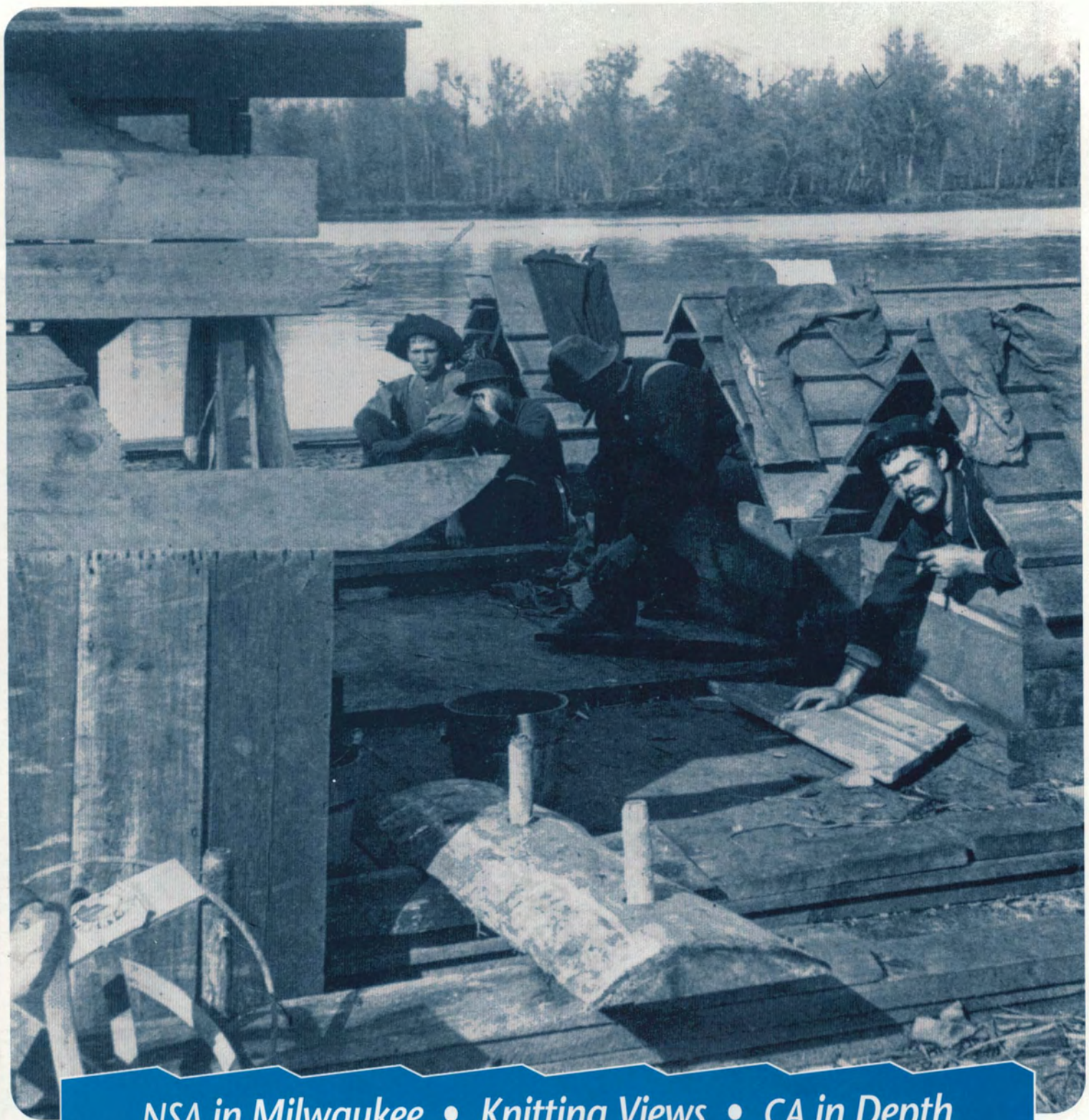
THE MAGAZINE OF 3-DIMENSIONAL IMAGING, PAST & PRESENT

July/August 1994
Volume 21, Number 3

STEREO WORLD

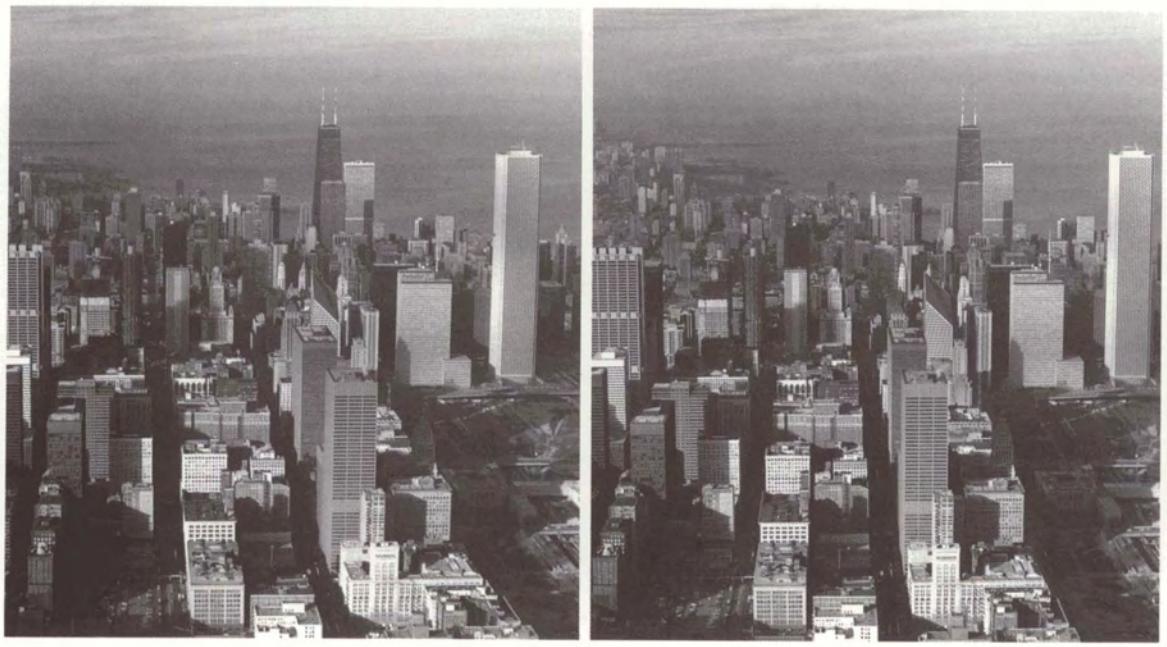
A Publication of the
NATIONAL
STEREOSCOPIC
ASSOCIATION



NSA in Milwaukee • Knitting Views • CA in Depth

3D Assignment

A Hyper Tale of Two Cities



"Downtown Chicago" by Alan Wagner of Streamwood, IL was taken from a Cessna 172 with a Pentax K-1000. The bright, low angle sunlight of late November, 1987 provides dramatic contrast against the overcast background. The nearest tall building (bottom center) is a deep red-orange in the original color print pair.

While we wait for responses to the "Wheels" assignment to arrive, here are the final entries selected in the "Hyper" assignment.

(Continued on page 38)

"New York City looking north from the World Trade Center" by John A. Lanzaro of Brooklyn, NY. This hyper aimed at the heart of the city has a base of about 40 feet and was taken in July of 1987.

STEREO WORLD

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(503) 771-4440

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Norman B. Patterson
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E. Jack Swarthout, Membership Secretary
12 Woodmere Dr., Paris, IL 61944

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ON THE COVER

Raftsmen aboard a lumber raft on the Wisconsin River, stereographed by H.H. Bennett in 1886. This is one of the many copies of Bennett views done by Tim and Karen White for their award winning Stereo Theater show THE ARTISTRY OF H.H. BENNETT. This and other features of the 1994 NSA 20th Anniversary Convention in Milwaukee, Wisconsin are illustrated in this issue. H.H. Bennett Studio Foundation collection.

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Member, International Stereoscopic Union

COMMENTS AND OBSERVATIONS
by John Dennis

Editor's View

Unearthing the Depths of Guilt

Holonnet interview with archeologist Dr. Vandy Stratum, July 26, 3994:

"Doctor, we understand that your team has uncovered some startling information at a late 20th century excavation site."

"Well, we feel confident we've finally learned the cause of the upheaval that led to the period in human history known as the Depth Ages."

"You Mean....."

"Yes, the epoch from which civilization is only now fully recovering seems to have been triggered by some very specific people and events in the early 1990s. At first, as you know, we were bewildered when digs at several ancient urban sites struck a dense layer of books and calendars filled with strange dots and blobs of color. Translation of the rather minimal texts revealed that this entire mass of material consisted of stereogram images printed in the billions and distributed to every corner of the planet."

"Was that 3-D? Like the pictures zapped into our heads today?"

"Similar, but people back then had to *learn* to fuse these printed images by actually controlling their own eye muscles. In fact some of our student assistants have been able to achieve this free viewing, as it was called, and now all they do is go on endlessly about the long-lost values of participation in the dimensional image creation process and artistic interactivity or some such thing. They haven't even noticed we haven't paid them for the last few weeks!"

"I'm still not clear on how all this led to the end of civilization back then."

"We found proof in the uppermost layer that these stereograms eventually took over the culture completely—from printed material to all existing electronic imaging systems and advertising media. Virtually the entire world economy revolved around the frantic design, production, and distribution of increasingly more clever and complex stereograms. Everybody was either making them, selling them, or viewing them with no time left for the production of essentials like food, clothing, energy or music videos. Once all rational values had been hopelessly distorted by the mania for new stereogram images, planetary civilization descended quickly into anarchy with the apparent exception of southern California where it was several years before anyone noticed a difference."

"But why is the time that followed called the Depth Ages?"

"We can only surmise that stereograms, having been the only things printed for some years, became the common medium of exchange in the following centuries. As these torn and faded pages disintegrated from use, the value or even existence of uncirculated copies must have become the stuff of legend once the original supply had been lost under the buried debris of the fallen culture. In fact it was no doubt a desperate, ingrained need for 3-D that eventually forced the survivors to reinvent technological civilization and with it a better way to satisfy our craving for stereograms by transmitting them directly into the cortex of every human brain on the planet daily."

"So what's this latest find you've made?"

"Following the tragedy in which my colleague Dr. Ergmore was lost in the collapse of a deposit of something called *MAGIC EYE XXVI*, we were able to excavate the deepest layers of these artifacts. It was here that we discovered an early history of stereograms that actually traced the whole madness back to a seemingly innocent article in the May/June 1990 issue of an obscure magazine called *Stereo World*. The poor fools had printed three primitive, single-image stereograms along with instructions for making more on a small computer. The technique had been developed a few years earlier, but it was this article that tipped off computer graphics freaks to what could be done with it. Within months, stereograms were being printed and sold, and within four years the phenomenon was irreversible."

"Couldn't anybody do anything to stop it?"

"You'd think so, but the few unaffected people who never learned to free view were already social outcasts by the time the danger became obvious. According to a salvaged scrap of news video, the United Nations Security Council *was* able to achieve one final act of justice in the last days of 20th century civilization. Without so much as a 3-D postcard, the people responsible for that *Stereo World* article were the first humans to be exiled to the moon "

"What did they have to say for themselves?"

"Well, they...oops, never mind, today's transmission is coming through. Oh, look, it's a fish, swimming in a pretty lagoon."

The 72% Solution

The vintage stereoviews reproduced in Jim Crain's new book *California in Depth* (see review in this issue) are reduced to about 72% of the original size, making possible parallel free viewing as well as viewing through a scope with nonprismatic, straight-on magnifying lenses. This size has been suggested on more than one occasion as one that *Stereo World* should use, while purists insist that only full 100% reproduction does justice to the original images and to the cards themselves as artifacts.

While the latter argument has considerable merit, the reproductions in *California in Depth* are very well printed and a delight to view either by free viewing or through a scope designed for that format. Bigger images will of course always make even better use of any printing method. But with continued improvements in digital image

(Continued on page 44)

READER'S COMMENTS AND QUESTIONS

Letters

Museum 3-D

Congratulations on another marvelous color issue of *Stereo World*. The 20th anniversary issue [March/April '94] is remarkable. Kudos to John Dennis.

Thanks for the all-too-brief article on Museum 3-D in Dinkelsbuhl, Germany. Hopefully this is just an introduction to a much longer article to come in a later issue. The museum, created by Mr. Gerhard Stief, is a wonderful place to behold. My wife and I visited it in 1992 and 1993 with another visit planned in 1995. There is nothing like it in the United States. It is a hands-on museum that spans the worlds of 3-D. More also must be said of Gerhard Stief, a distinguished German photographer of note. His personalized tour is a must.

Any 3-D enthusiast traveling to Europe must make Dinkelsbuhl a priority. Take plenty of film for the magnificent views of this medieval walled town and the neighboring towns of Nordlinger and Rothenberg-ob-der-Tauber, an unforgettable experience.

Bill Zulker
Wayne, PA

High-Tech 3-D in Japan

I have just returned from several weeks in Japan and believe my fellow readers of *Stereo World* may be interested to know of continued stereo interest there.

An advertising paper fan with an imprinted 3-D [Single Image Stereogram] graphic was being used to promote chicken ramen noodles. I found several examples of Realist and other stereo cameras available on the main display shelves of camera stores in the Ginza. They were going for the equivalent of $400 to $650 depending on aperture and condition. The Russian models such as the FED were also represented. Bookstores carried various types of view books packaged with their own 3-D glasses. The two I picked up were of assembled dinosaur bones and a museum tour. My 9 year old kid selected a Power Rangers kids book in 3-D that was selling like hotcakes, or rather like Okonomiyaki - the Japanese equivalent. 3-D VHS videos that could be picked up at the audio/video outlets included ones on dinosaurs and undersea life.

Of most interest, however, was a special 3-D film at the Sony building in the heart of the Ginza. Four different 3-D showings of various shorts ranging from Japanese modern architecture to pop music in Japan were available for public viewing on a wide format home-sized screen from a laser disc. The displays in the Sony building promote new technology, and the answer to my question as to present consumer availability of the 3-D laser disc itself was a simple "not yet." The 3-D experience was the equal of the Tokyo Disneyland large screen 3-D Captain EO film. Sony's promotion of the 3-D format is itself of as much significance as the high quality of the projected images in a mini-theater setting that replicated home use. Hopefully the "not yet" response I got is translatable to "just wait and see what's coming."

Dale J. Walther
Anchorage, AK

Professional Film for Better Slides

As a new subscriber I find your magazine very interesting and beautifully produced. I am writing to comment on Mr. Patterson's column in the June 1994 issue. [Vol. 21 No. 2.] Mr. Patterson is of course correct in saying that reversal films are increasingly out of favor for amateur photographers and consequently are harder to purchase in a local shop. Have no fear. Professional photographers continue to use more and more slides because slides are less expensive, easier to store, and have higher resolution than prints. Magazines scan color pictures from slides and slides are the expected format. Professionals mostly shoot either Kodachrome or some sort of Ektachrome that uses "E6" processing (with the exception of Kodachrome almost all professional films by all manufacturers use E6 processing). I happen to be fortunate in that I live in Manhattan, eight blocks from "the photography processing district" centered around 20th street between 5th and 6th avenue. The services are pretty standard. E6 processing in under three hours (2 hours for a rush) at six to seven dollars a roll depending on the lab. Kodachrome, developed by Kodak, in two days, or an overnight rush, for about eight to nine dollars a roll. Special instructions such as "DO NOT CUT!!! DO NOT CUT!!!" are no problem to any lab that caters to professionals. In addition since slides are a major portion of the professional business, prices are very competitive and quality is extremely important. I suggest you seek out your local professional lab for faster, better work that in many cases is cheaper than a mass market lab. Every city should have a few pro labs because turnover time is very important to professional photographers.

Before I used a professional lab I used to think that all film was alike and it was my crappy local minilab that ruined the colors. After accidentally buying a roll that was properly refrigerated and getting it printed at the same minilab I realized that there is a reason why professionals use pro film. Professional grade films are far and away better than the over the counter stuff. It is a combination of how the film is stored and the quality of the emulsion. I currently shoot Realist format slides. I buy refrigerated, indate domestic Kodachrome or Lumiere from a local discount photographic supply house for under

(Continued on page 44)

If you have comments or questions for the editor concerning any stereo-related matter appearing (or missing) in the pages of Stereo World, *please write to John Dennis, Stereo World Editorial Office, 5610 SE 71st Ave., Portland, OR 97206.*

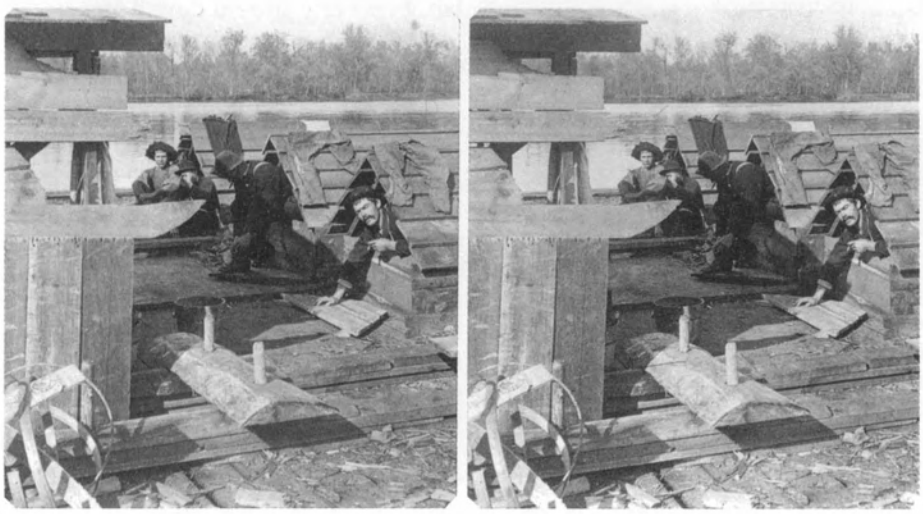
NSA '94

Celebrates 20 Years

by John Dennis

From the minute you walked into the massive open space of the Hyatt Regency's atrium lobby, you knew something special was in the works.

The sheer size of the place seemed appropriate for the 20th anniversary, 1994 convention of the NSA June 17 to 19 in Milwaukee, Wisconsin. The facility was ideal for the group's needs, with the MECCA Convention Center (where the Stereo Theater programs and the Trade fair were located) being just across a skywalk from the hotel.



Raftsmen in their doghouse-size shelters aboard a lumber raft on the Wisconsin River, stereographed by H.H. Bennett in 1886. This is one of the many copies of Bennett views done by Tim and Karen White for their award winning Stereo Theater show THE ARTISTRY OF H.H. BENNETT. (See Bennett article in SW Vol. 18 No. 5.) H.H. Bennett Studio Foundation collection.

This was the first NSA convention headquartered in an atrium style hotel, and aside from some resemblance to a multi-story prison cell block, an interesting advantage was noticed the evening before the convention opened. Members were able to see who was headed for what room, and often which rooms were open, during the "room hopping" hours by simply looking across at other balcony levels. Besides leading to the convention center complex, skywalks from the hotel led to two downtown shopping malls where anything from film to food to souvenir beer mugs were available. It was perfectly possible to avoid the week's heat wave by never leaving air-conditioned space, but Milwaukee's riverfront, old town area, museums real restaurants, and Lake Michigan were just a few blocks from the hotel and well worth the walk.

NSA 1994 Milwaukee drew 625 registered attendees and 250 one-day admissions for a total attendance of 875. While the 20th anniversary theme predominated, the "official" slogan was "Stereo Galore in '94!" suggested by an unidentified *Stereo World* staffer and mercifully mentioned only on the introductory page of the program book. The Trade Fair featured an impressive variety of images and equipment both vintage and new, with products like Ross Follendorf's

Milwaukee

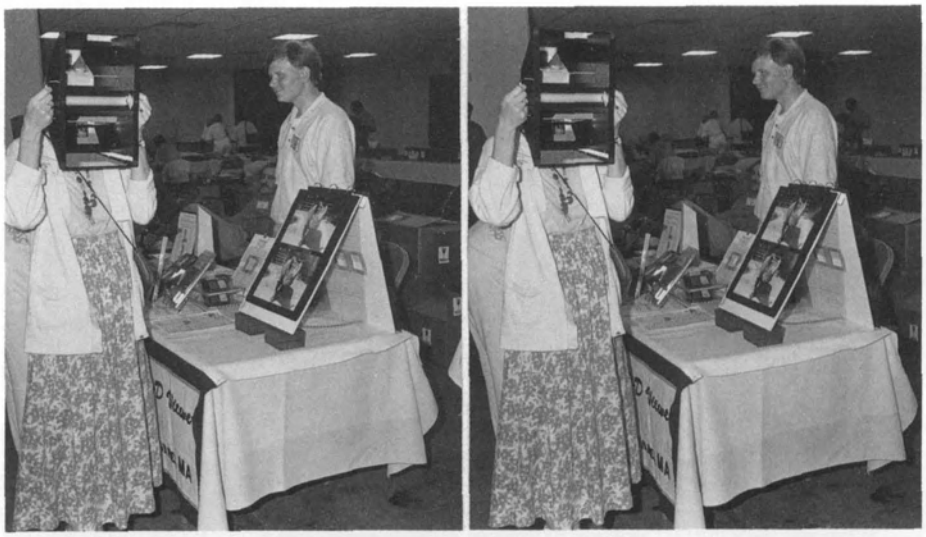
of Collecting and Creating Stereo History

reproduction Arcade Viewer combining both worlds. After adding more to accommodate all of the dealers the room was filled with 107 busy tables, some with people three layers deep in front waiting to see the products on sale or display.

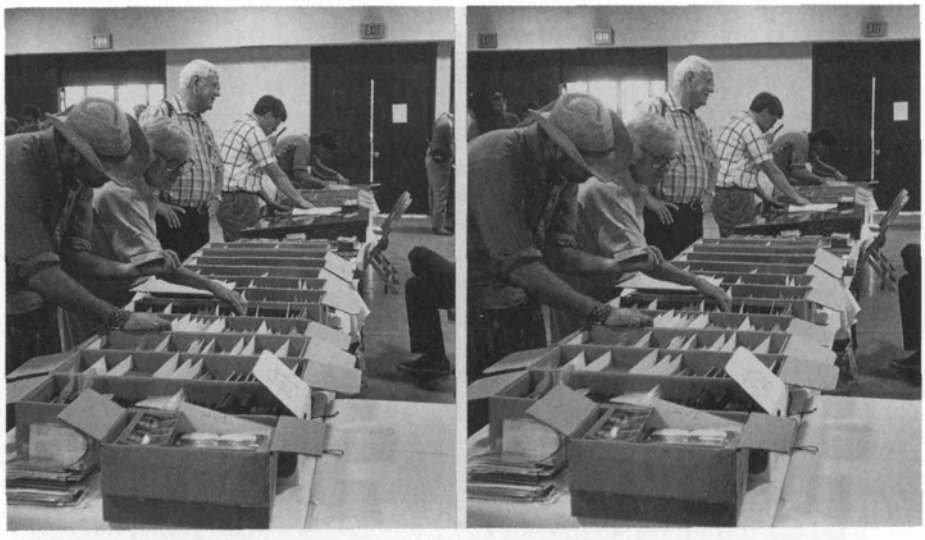
Stereo Theater Shows

The Stereo Theater was on the second floor of the huge MECCA Convention center in a large octagonal room adjacent to the exhibit hall containing the Trade Fair. Despite the room's unusual shape and a ceiling that could have been a foot or so higher, the facility worked out well for the wide new NSA screen, the complex projection platform and the large crowd attending the three days of stereo projection shows. This was thanks largely to the efforts of Stereo Theater Coordinator Larry Hess and Lead Projectionist Bill Duggan who carefully planned and set up the whole arrangement. Projection of the shows (especially on Friday) went more smoothly than ever, with any brief technical delays being the exception.

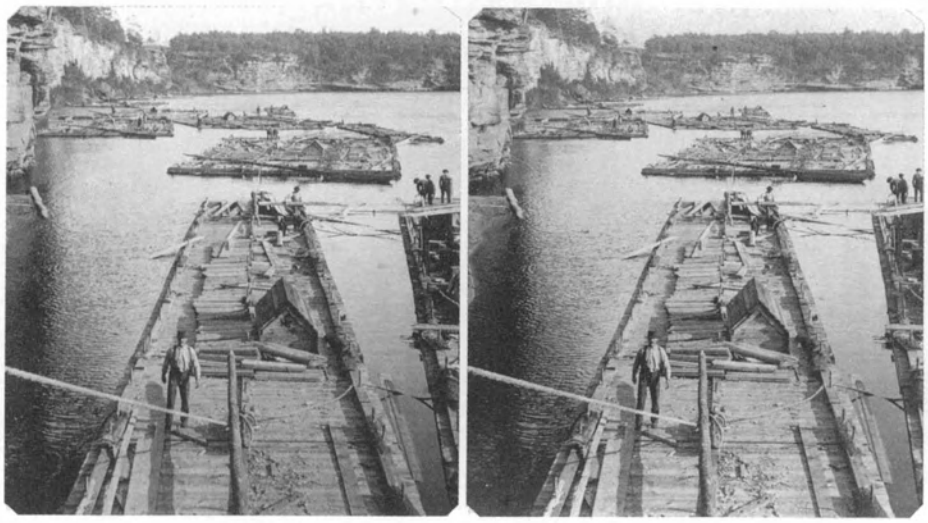
At some conventions it's been common to see a dozen or so people standing outside the Stereo Theater doors at any one time, chatting during shows. This year the hallway was generally deserted, with people eager to see nearly every show and to hang on to their seats. Equipment included several



One of the more unusual viewers to be found on any Trade Fair table was this new oversize View Magic™ over/under mirror viewer for large print pairs as seen at right. Some people found the four-inch limit to vertical image size frustrating in the regular View Magic system (see NewViews Vol. 19 No. 1) and this industrial-strength version is the answer.



Good lighting, open space and a snack bar helped make the Trade Fair comfortable for those who occasionally gave their eyes, backs and feet a break from the tables loaded with views and equipment.



Bennett view of lumber rafts in various configurations, 1886. Up to seven sections could be linked in long "strings" for passage through rapids and narrows. In wide or calm parts of the Wisconsin, rafts were linked together up to three strings wide (as in the background here) using wooden strips. This is from Bennett's series "The Camera's Story of Raftman's Life on the Wisconsin" copied for the show THE ARTISTRY OF H.H. BENNETT by Tim and Karen White. H.H, Bennett Studio Foundation collection.

H.H. Bennett No. 1432, "Running the Kilbourn Dam, On Board the Raft." Bennett perfected his instant shutter just as river rafts were about to be replaced by railroads for the transport of lumber. With his son Ashley and a box of Cramer Dry Plates, Bennett recorded his "The Camera's Story of Raftman's Life on the Wisconsin" series during a hundred-mile raft journey in the autumn of 1866. Water boils up between the flexible connections of the raft sections in the rapids as the steersman clings to his oar in this view copied by Tin and Karen White for the NSA Stereo Theater. H.H. Bennett Studio Foundation collection.

carousel projectors in various combinations, the Brackett Dissolver and a modified View-Master projector.

"THE ARTISTRY OF H.H. BENNETT" by Tim and Karen White presented some of the best of Bennett's views of the Wisconsin Dells, the native Winnebagos, life on the river rafts, and the St. Paul Ice Carnivals. Copied in the back of Bennett's own studio from uncirculated originals in the Bennett Studio Foundation collection, the sequences in the show were accompanied by folk music of the region and time. The 40-minute show opened this year's Stereo Theater Friday morning in a packed auditorium and was repeated for an audience every bit as enthusiastic and nearly as large a on Sunday. The combination of skilled copying and mounting with thoughtful image selection and evocative music dramatically enhanced the "time machine" aspect of stereos by this unique local artist.

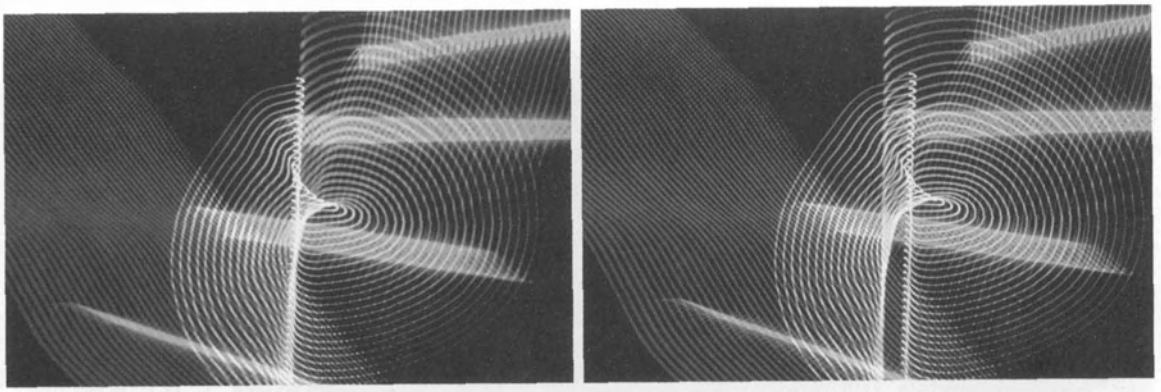
"THE STATE FAIR" by David Lee and Michael Isenberg revealed the 3-D color and motion of amusement rides at the California State Fair through long-exposure, night stereographs. Views from unexpected angles were combined with both close-ups and long shots to provide a fascinating new way of seeing the fair. Given a translucent solidity by the long exposures, the motions of familiar rides created massive, multicolored sculptures in the stereo images.

"IT'S A SMALL WORLD" by Edward Miller demonstrated again the nearly magic appeal of close-up stereographs achieved using a base shorter than human eyes. While sweeping hyperstereos of mountains and valleys can be thrilling, a peek inside the small world all around us, from the 3-D perspective *of* that world, can seem an even more special privilege. Maybe the miniaturization of large things is easier to imagine than the surprises found when, in effect, we ourselves are shrunk to insect size or smaller.

"VIEW-MASTER TREASURES" by Wolfgang and Mary Ann Sell was a delightful assortment of rare and unusual reels from their extensive collection. Many of these exist only as test reels for packets never released for various reasons and are unlikely ever to be seen anywhere else. Others are promotional reels for View-Master or other products, and are nearly as rare.

"GEORGIA ON MY MIND" by Cynthia Morton illustrated the richness and diversity of life in Atlanta. Scenes of the city's natural beauty, modern architecture, and more homey qualities were combined with images like that of a tourist oriented peanut store. The 10 minute, 60 slide show was an open invitation to the Atlanta International 3-D Festival '95, combining the 21st annual NSA Convention and the 10th ISU Congress, June 27 to July 3.

"LAND OF ENCHANTMENT" by Paul Milligan revealed the archeological and geological beauty of New Mexico along with its people and wildlife. This master of stereography uses about every trick in the book—from hyperstereo to extreme close-ups to a variety of lenses and remote control cameras



Even without their intense colors, the abstract light tracings from John Baird's Stereo Theater show 3-D ABSTRACT I&II make an interesting study in movement and depth.

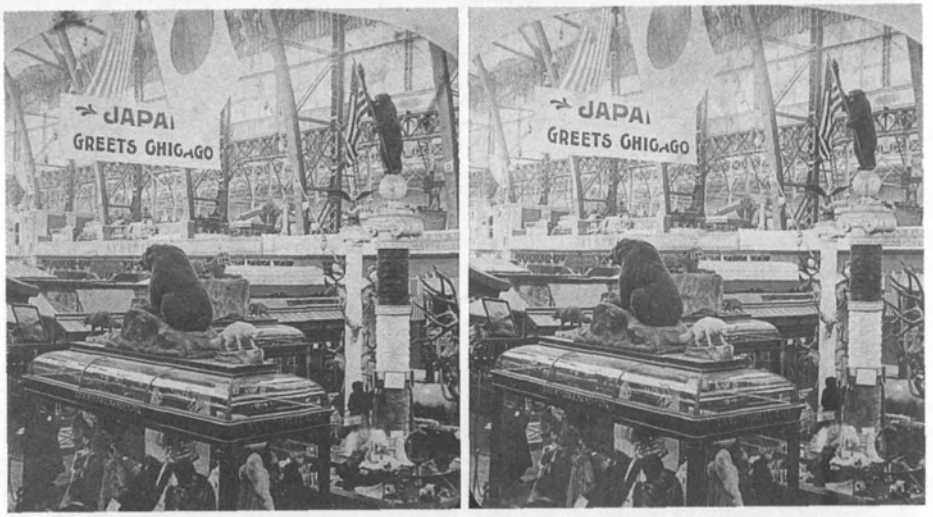
while capturing New Mexico in what can only be called stunning stereo.

"**COLUMBIAN EXPOSITION OF 1893**" by Richard Eveleth was a look back through the stereoscope at the architecture, exhibits and events of the huge Chicago expo.

"**3-D EXTRAVAGANZA**" by Manley Koehler took advantage of most of the width of the new NSA screen to present widescreen 3-D scenic and human interest images from all over the U.S. and Canada. Photographed and projected using high quality anamorphic lenses, the show demonstrated the breathtaking potential of widescreen stereo when handled by a skilled photographer. It proved that the stereo window doesn't need to stop at Realist, European or full-frame width, and that widescreen stereo isn't limited to multi-million-dollar 70mm or IMAX movies. This was one of the two shows repeated on Sunday to a large and delighted audience.

"**VISIONS IN DEPTH**" by Paul Wing was a wide-ranging and personal look at the work of someone who has been an active stereographer for over 50 years. Paul has won awards for his work all over the world in nearly every stereo technique, and several examples were included. His images and narration made it easy to understand why he is regarded as one of the world's leading authorities on stereo photography, equipment and history.

"**KODAK DEPTH IMAGING**" by Kodak Senior Development Engineer Roy Taylor was added too late to be included in the program book, but provided a fascinating look at how Kodak is promoting the new Depth Imaging lenticular 3-D system for commercial advertising and exhibit applications.



Taxidermy, fur coats, and the massive architecture of the buildings can be seen in this view copied for Richard Eveleth's show COLUMBIAN EXPOSITION OF 1893, which was rich with historical statistics accompanying views of the often cluttered exhibit layouts of the day.

Several illuminated examples of large lenticular transparencies were on display in the exhibit area of the Trade Fair where Mr. Taylor was available much of the time to answer questions about the system. (See the extended coverage of Kodak's reentry into 3-D in this issue.)

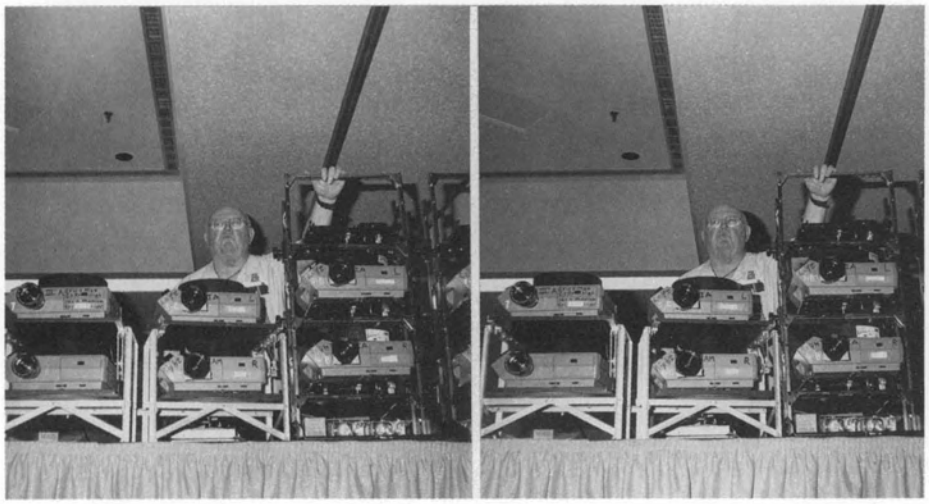
"**OUR WONDERFUL PLANET EARTH**" by Walter Sigg combined the scenery, birds and underwater views of View-Master science reels to provide one of the most interesting and smooth shows ever done using a View-Master projector. Part of the sound was from enhanced recordings taken from Talking View-Master reels, including the Apollo Moon Landing packet.

"**THE WORLD BENEATH YOUR FEET**" by Walter C. Erbach was just the thing for those left wanting even *more* close-up stereography following Edward Miller's show. Those who have attempted shooting things like this know how much effort and patience is involved. While flat macro photography can make tiny objects or creatures look like oddities, stereo can show the living reality of that "world" beneath your feet.

"**3-D ABSTRACT I & II**" by John Baird filled the air with brilliant colors and tracks of light sources from fluorescent tubes to strobes and fireworks. This was a selection of his best images, building on the success of his "Abstract Visions in Time/Space" seen at last year's convention in San Diego.

"**HIGHWAY USA**" brought from the NSA Holmes Library by Ray Holstein, is a program of 105 scenic views produced in 1948 by the Barber-Greene Equipment Company as a lavish tribute to U.S. highways and their builders.

The original image pairs were shot on 5x7 Kodachrome, then transposed and mounted in metal holders designed for the trays of a huge, custom-built, automatic projector. (See *SW* Vol. 11 No. 6.) Probably the last in existence of the



Stereo Theater projectionist and consultant Bill Duggan stares intently at the screen to align target slides while setting up the equipment-covered projection platform.

three ever built, the projector is one of the treasures of the Holmes Library collection. It was used to project "Highway USA" at the 1987 NSA convention in Philadelphia and again in 1988 in Cincinnati. The present show consists of 35mm copy slides. The recorded narration by radio personality Paul Harvey extols the wonders and future of highway travel in the U.S. (from the perspective of 1948) with nearly every new image to appear on the screen.

"**WINDS OF CHANGE**" by Mel Lawson consisted of seven essays by the late master of stereography on New Guinea—including Journey to Yesterday, Birds of Paradise, Community of Man, On Canoes, and Pacific Battleground.

"**SSA 100 YEARS ANNIVERSARY**" by Jay Hollomon and the Stereoscopic Society of America provided a look at some of the best work of both past and present, print and slide members. Views from the print folios were copied for projection, which showed the full range of fine color and black & white work circulating in the Society folios in this 101st anniversary year of the parent organization's founding in England.

"**FASCINATING FIGURE 3-D**" by Otto Walasek featured the best work of this award winning stereographer who specializes in nude studies done in outdoor settings.

"**INTRODUCTION TO STEREO**" by Guy Ventoulliac presented an exciting look at the full range of possibilities in stereo presentations and the extent of their visual impact. He has produced a number of commercial 3-D slide programs in France, and both NSA and ISU audiences have seen his work projected.

Workshops and a Side of Video

Three workshops were held during the convention, two in conjunction with the Stereo Theater and one near the exhibits in the Trade Fair. Bob Brackett hosted "Basic Slide Mounting" and "Mounting 2x2 Slides" using the Brackett Dissolver Projector and the Brackett Auto-Synch 2x2 Projection System to display the results.

The workshop on print mounting was actually a 3-D video by Craig Daniels which ran in in a corner of the Trade Fair room. Titled "Sidelong Glances," the side-by-side image pairs on the screen were fused with the help of dual 45° mirrors mounted in viewers which had the disquieting effect of directing your vision completely to one side. Those passing the booth saw people apparently staring intently at a blank wall through viewers with no openings! Once you were lined up correctly with the monitor at your side, the fused 3-D video was clear and well shot, but few people seemed prepared to watch the entire instructional tape on mounting stereo prints—that probably being a better project for a winter evening at home. For information on "Sidelong Glances" or other stereo print oriented material, contact StereoType, PO Box 1637, Florence, OR 97439.

Awards

NSA President Gordon D. Hoffman announced the annual awards for NSA volunteers at the Saturday evening banquet.

The newly named **PAUL WING STEREO THEATER AWARD** for the best new stereo projection show went to Tim and Karen White for their presentation *The Artistry of H.H. Bennett.*

The 1993 **FELLOW OF THE NSA** for distinguished scholarship and extraordinary knowledge of stereoscopy went to John Dennis.

The **ROBERT M. WALDSMITH MEMORIAL AWARD FOR MERITORIOUS SERVICE** went to Dave and Robin Wheeler.

The **EDWARD B. BERKOWITZ AWARD** for the Outstanding Historical Article in a Recent Issue of *Stereo World* went to T.K. Treadwell for "Dr. I. I. Hayes, the first Polar Photographer" in Vol. 20 No. 3. Honorable Mention in this category went to Walter Lewis for "George Lewis: Keystone's Last Stereographer" in Vol. 20 No. 5.

The **LOU SMAUS MEMORIAL AWARD** for the Best Article on Modern Stereoscopy in a Recent Issue of *Stereo World* went to R.F. Housholder for "Shooting Iceland's Surprises With A Stereo Spice Rack" in Vol. 20 No. 1. Honorable Mention in this category went to John Dennis for "Stereo in Eastbourne" in Vol. 20 No. 4.

Convention Chairman Harry Richards at the Awards Banquet.

Competitive Exhibits

Speaking next at the banquet was Exhibits Coordinator John Waldsmith, who announced the winners of the 1994 Competitive Exhibits.

"**THE CAMERA'S STORY OF RAFTMAN'S LIFE ON THE WISCONSIN**" by Russell Norton was the big winner, earning Best in Category in "Quality of Life", Best of Show, and the President's Award for this selection of 11 H.H. Bennett views documenting this dangerous occupation.

"**PLACES GONE BY**" by Jonne M. Goeller was awarded Best in Category for "Views of a City, State of Region in the U.S. or Canada."

"**CARIBBEAN PORTS OF CALL**" by Robert F. Kruse was awarded Best in Category for "Transportation Views."

"**FAMOUS AND INFAMOUS PERSONALITIES**" by Bill C. Walton was awarded Best in Category for "Famous Personalities."

"**CHAPMAN'S EXPEDITION 1860-64**" by Russell Norton was awarded Best in Category for "Views by a Single Photographer or Publisher."

"**WET AND WILD**" by Jonne M. Goeller earned First Place in the "Open" category.

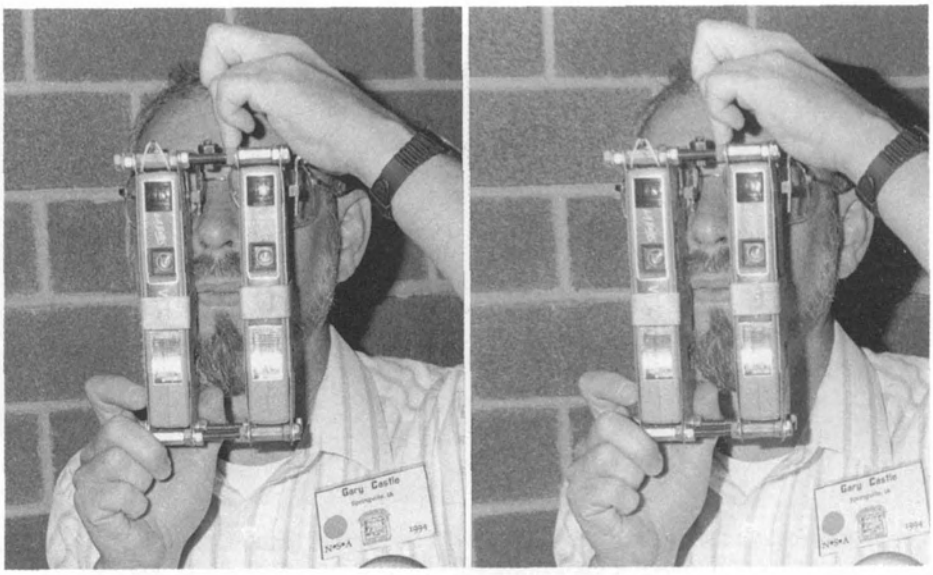
"**HAND-TINTED VIEWS**" by Brandt Rowles and "**SCOTLAND THEN & NOW**" by Bill C. Walton tied for Second Place in the "Open" category.

"**PETER**" by Robert F. Kruse was awarded Third Place in the "Open" category.

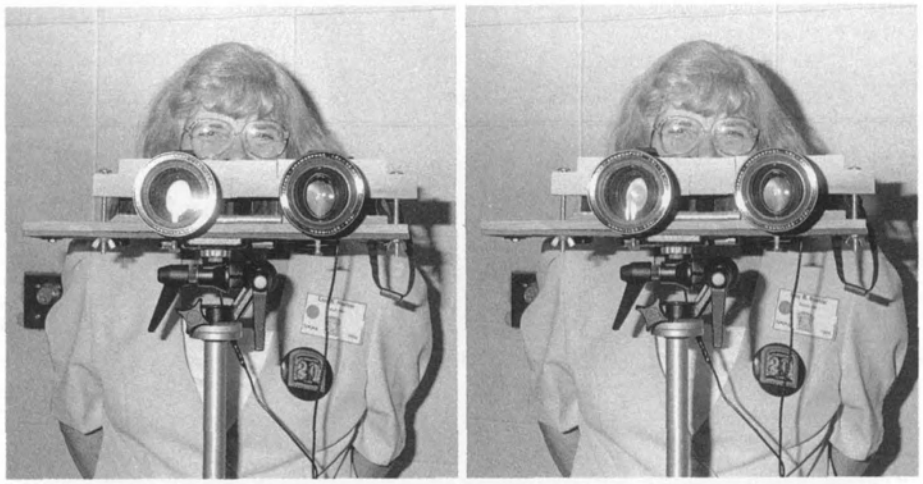
"**ULYSSES S. GRANT**" by Jim Bultema received Honorable Mention in the "Famous Personalities" category.

Invited Exhibit

This year's Invited Exhibit was direct from the back room of H.H. Bennett's studio and included some of his personally designed photographic and stereo mounting equipment, all made available to the NSA by the H.H. Bennett Studio Foundation, Inc. In a large glass case in the exhibit area of the Trade Fair were his stereo camera, his hand crafted high-speed shutters, view cutters and mounters, photos, notebooks, film holders, and one device who's purpose remains a mystery. Jean Dyer Reese (Bennett's granddaughter) and Oliver Reese accompanied the exhibit to answer questions about the artifacts and the Bennett Studio Foundation. A special plaque was presented to them at the banquet in gratitude for the efforts of the Foundation in preserving not only Bennett's images and equipment but in maintaining the studio and the business as both a living piece of history and a repository of history.



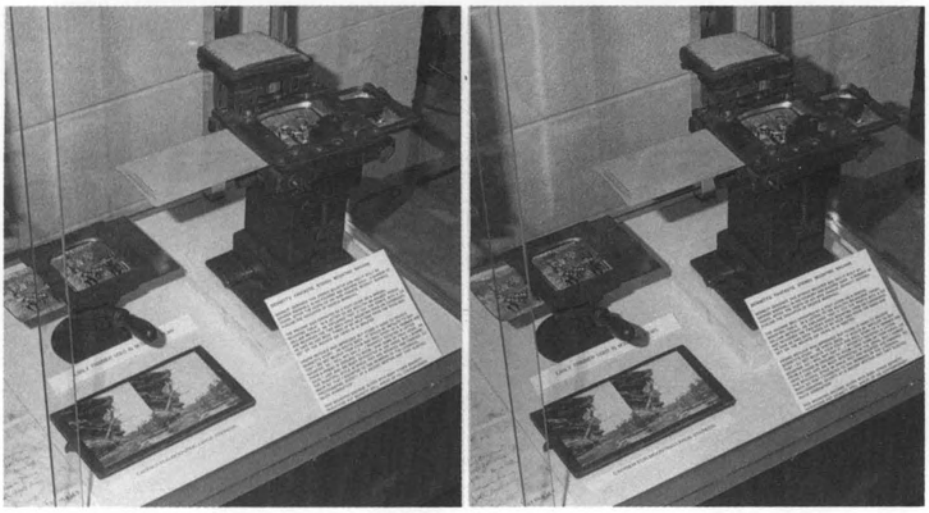
The smallest format custom camera rig seen at the convention was this synchronized pair of inexpensive 110 cameras held at perfect 3-D viewfinder separation in a sheet metal frame. Built by Gary Castle, the rig produces print pairs of a quality equaling or surpassing those from the plastic mirrored Loreo split-frame 35mm camera.



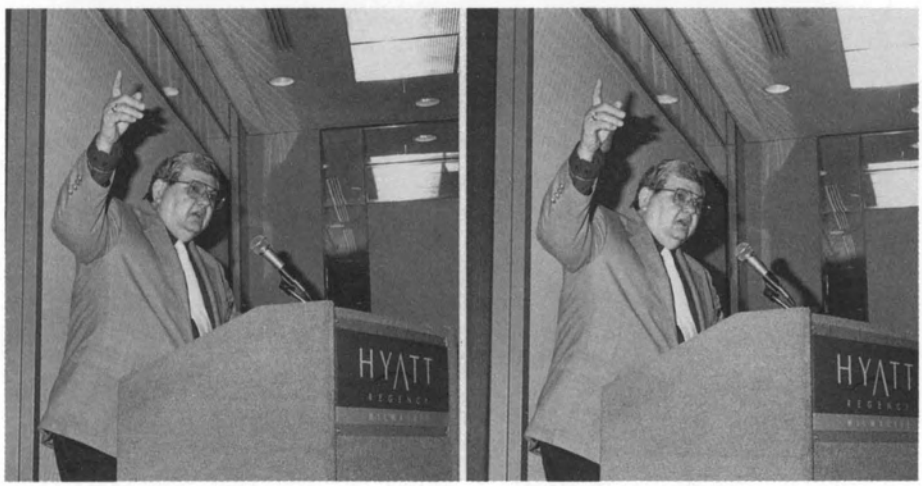
The largest format custom rig present was the one used by Manley and Lois Koehler to produce the wide-screen show 3-D EXTRAVAGANZA. Here Lois shows off the twin anamorphic lenses (note the oval shape) attached to synchronized 35mm cameras and held in perfect level orientation to allow the image pairs to be "spread out" again in alignment when projected.

Banquet Speaker

Without doubt, the single most important camera to the development and popularity of modern stereography was the Stereo Realist, made right there in Milwaukee until 1960 by the David White Company. Speaking at this year's 20th anniversary banquet was NSA member Ron Zakowski, employed by the David White Company for 43 years and an expert on every spring, screw, lever and plate in every model of Stereo Realist Camera. His talk took the attentive audience through every business



One of the main attractions in the INVITED EXHIBIT from the H.H. Bennett Studio was the large device at the right. It die-cut the arch-top print pairs, transposed the prints, and mounted them on the card stock in precisely the correct positions with the help of a foot lever. Bennett designed the unique machine and said he had seen "three of my help take from the wash and get on the mounts 320 views in 45 minutes." The view in the mounter is face up for display purposes, as prints were loaded face down in operation.



Ron Zakowski relates details of his 43 years with the David White Company making Realist Cameras and related equipment for the audience at the 1994 Awards Banquet.

Magician, mathematician, writer and NSA member Raymond Smullyan entertains at the banquet using nearly as verbal tricks as those involving the red silk cloth.

move and product development involving the camera from its earliest days to the final close of production in 1972.

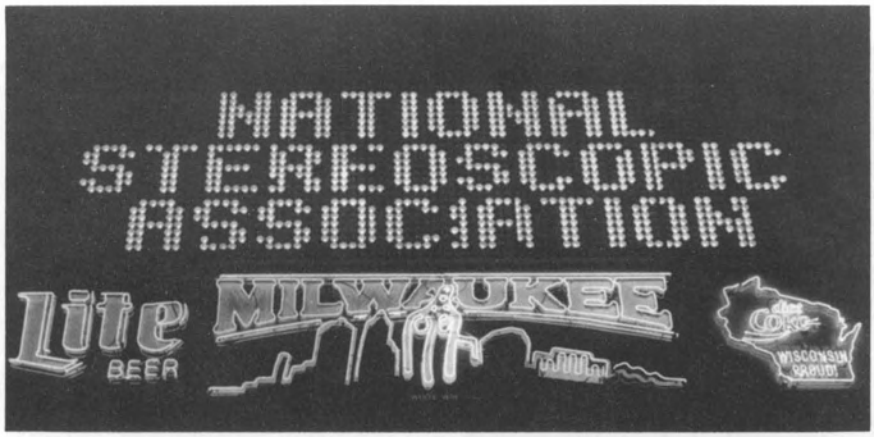
Ron purchased all of the firm's remaining stock of camera parts and equipment and today is the world's leading specialist in the repair and maintenance of Realist cameras. (He had, in fact, personally made about half of all the Realist Custom models ever manufactured.) When the company eventually dropped the Realist name and returned to making only precision surveying equipment as the David White Company, Ron rescued the large "Realist" sign as it was being removed from the side of the building. Along with photos of some of the company's buildings, the sign was on exhibit in the Trade Fair room for all to see.

Banquet Entertainment

As a special treat for the record-breaking 216 people attending the 20th anniversary banquet, the program included a performance by magician Raymond Smullyan who is also a mathematical logician, essayist, writer of puzzle books, and an NSA member! He kept up a constant monologue during the entire performance while he roamed around the room making cards and coins appear and disappear. For one of his most entertaining feats, he announced that he would make a red handkerchief leave his pocket, fly around the room, and return to his pocket. After counting to three and clapping his hands he pulled the handkerchief from his pocket and explained, "You don't know what an amazing trick I did! *Any* magician can make a handkerchief leave his pocket and fly around the room, that's trivial! But to make it become *invisible* during its flight..."

New NSA President Elected

In their annual meeting the evening before the convention, the board of directors of the National Stereoscopic Association elected Peter Palmquist of Arcata, California, the new president of the organization. Photographic Historian Palmquist has written 33 books and over 300 articles (including some for *Stereo World*) on various photographers and matters related to the study and preservation of



The MECCA reader board, visible from the corridor windows of the Center's Convention building, seemed designed to let anyone disoriented by the sensory overload of the NSA's 20th anniversary convention know exactly where they were.

every aspect of photo history. He is one of the most respected authorities known on the history of photography in California, and is a long-time member of the NSA. He brings to the office a familiarity with the world of academic research, the people and institutions involved, and the problems and opportunities to be encountered in promoting serious attention to both historic and modern stereography. His experiences and definite feelings on the need for better preservation of our photographic heritage (including images being produced today) were the subject of his keynote address to the 1993 NSA Awards Banquet in San Diego.

The Bus Tour

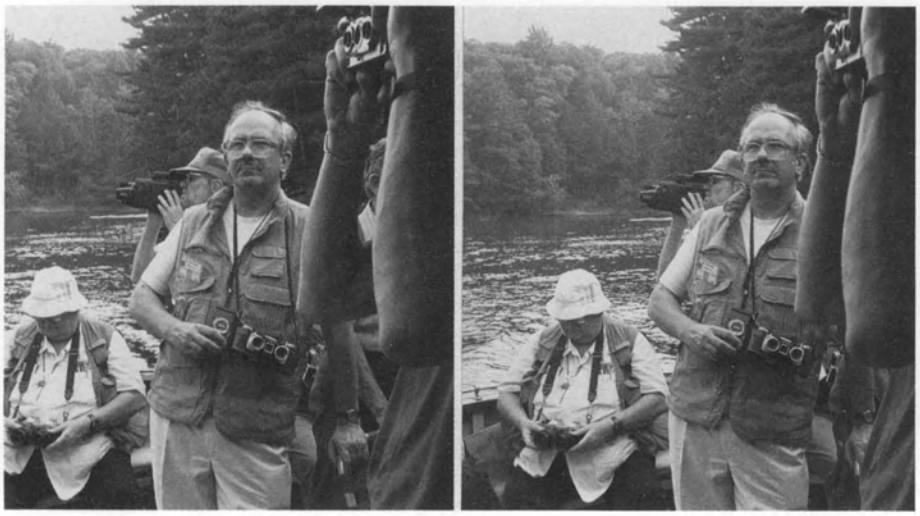
Two buses full of NSA members and their cameras left Milwaukee at 7:00 Monday morning, stopping first at "The House on the Rock" near Spring Green, Wisconsin. The original house was hand-built by eccentric collector Alex Jordan at the top of a 450 foot high rock overlooking the Wyoming Valley. It's an interesting but relatively small structure except for the "Infinity Room" which extends 218 feet out over the valley and invites stereo photography with its 3,246 windows providing plenty of interior light and vistas above the tree tops. The rest of the large tourist complex consists of a connected series of windowless warehouse-type buildings scattered along the ridge behind the rock and generally hidden by trees. Inside is what has been called a "collection of collections" that includes everything from the world's largest carousel to dolls, circus models, 19th century shops, armor, guns, model ships, carriages, and working automated music machines from table top size to one filling a large room. The word "eclectic" doesn't even begin to cover it.

The attraction is in no sense a museum, as few of the exhibits are identified with informative labels of any kind and plastic imitations rest next to actual artifacts to fill out some collections. The general impression is one of being trapped in an alternate universe in which the Smithsonian has been purchased by Disney and is being managed by P.T. Barnum. The orchestrions and larger music machines are genuine, however, and were well documented in stereo by the delighted tour group. With each room in the "Music of Yesterday" building, the devices seemed to get bigger, more elaborate, louder, and more challenging to capture in the frame of a stereo camera.

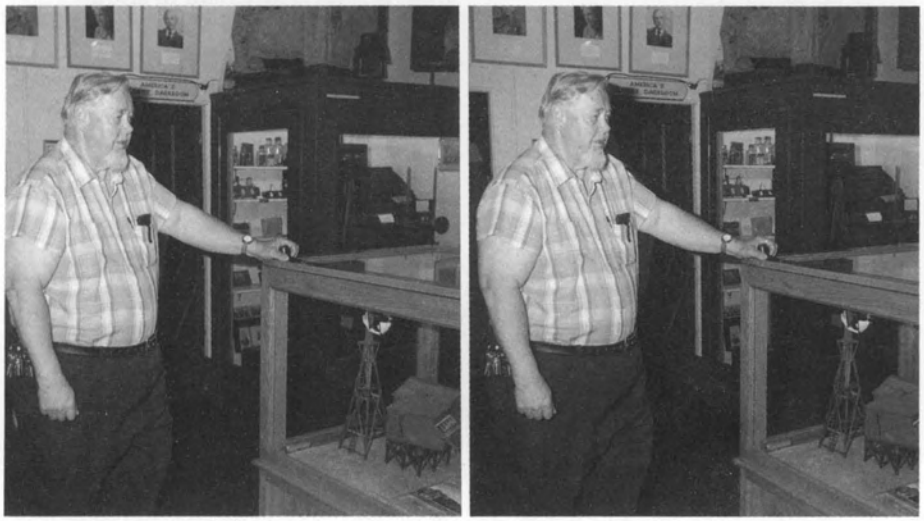
By the time most on the tour reached the post-industrial artifacts and walkways of the "Organ Room" they had surrendered to the overwhelming, surrealistic impact of the dream-like interior spaces and had stopped trying to stereograph what was essentially itself a 3-D illusion. Fortunately for those in need of more film for the rest of the tour, the House on the Rock is equipped with not just a souvenir shop, but an entire *mall* of shops and boutiques where visitors could start buying their *own* collections of—stuff.

On arriving in Wisconsin Dells, one of the first things visible from the tour bus was the dam that Bennett had so actively opposed and that flooded much of the river scenery he had stereographed. The town that was known as Kilbourn City in Bennett's day is now surrounded by miles of billboards, water slides, motels, miniature golf courses and fast food establishments. But once the tour group boarded its boat and headed

Suspended in mid air, stereographers snap away in the "Infinity Room" during the NSA bus tour stop at The House on the Rock near Spring Green, WI. The narrow, 218-foot long room, which extends straight out from the house high above the valley and bounces gently with every step or film advance, is only one of the oddities to be experienced and photographed at the unique tourist attraction.



A high point of the bus tour was the excursion boat ride through the Dells of the Wisconsin, past the same rock formations stereographed by H.H. Bennett in the 1860s -90s. An open area at the stern of the boat allowed eager stereographers to try their luck at capturing the scenes on the fly with today's stereo film and video cameras.



Oliver Reese of the H.H. Bennett Studio Foundation explains the history of the building to visiting NSA members during the bus tour. Within minutes, the small room was packed nearly solid with stereo-tourists examining every inch of the historic site. Behind him is the open door to "America's Oldest Darkroom" where prints are still made from Bennett's large format negatives.

upstream, a time machine effect took over that was limited only by the lack of the original steam boats. The intricately layered and sculpted rocks of the Dells themselves look unchanged except for the higher water level. They were undoubtedly stereographed more times that day than any time since Bennett himself explored every rock and cove with his camera and tripod.

The boat stopped at Stand Rock, where Bennett had captured his son Ashley in mid leap from the cliff to the rock with his newly designed instantaneous shutter. Today trained dogs make the leap for tourists (with a safety net) but the weather was too hot to allow the dog to jump on the day of the tour. We busied ourselves stereographing the rock and each other and debating who should volunteer to make the jump for the benefit of all the waiting cameras.

Another stop was made at Witches Gulch, where the low light in the narrow canyon made photography difficult but where the hike to the other end was rewarded by the presence of a lunch stand. Since the same establishment had been photographed by Bennett, this commercial intrusion on the scenery (along with its ice cream and cold drinks) was quickly accepted as a welcome part of stereographic history.

On returning to Wisconsin Dells, the group finished the day with a visit to Bennett's studio. We'd been advised to limit the number of people entering the small building at one time, but the opportunity to stand inside a functioning stereographer's studio still selling views from the original stock quickly overcame reason and claustrophobia.

Parading through the "Old Time Portraits" business operating in the building's front room, the tour group's leading edge soon filled every available square foot of floor space in the museum/sales room at the center of the structure. Display cases filled with Bennett's equipment, photos and various records and mementos of a life in photography were studied in detail, along with the large prints and other equipment covering most of the wall space. The studio was named to the National Register of Historic Places in 1976 and is the oldest photographic studio in the U.S. to be operated by members of the original family. As the crowd slowly moved around the cutaway scale model of the studio building occupying the center of the room, the open door of Bennett's still functioning darkroom drew everyone's attention as they passed. (Prints from Bennett's large format negatives are made for sale to support the Foundation.)

Near the sales counter, movement stopped almost completely as people gathered to look through the files of sample views and order by the number from lists made on the spot or brought from home. For most stereo collectors, this was a once-in-a-lifetime experience and "sold Out" tags soon replaced a growing number of views in the files. On display behind the counter was the NSA plaque awarded the H.H. Bennett Studio Foundation for their Invited Exhibit at the convention and "For Exceptional Foresight in Preserving the Historical Heritage of Our Stereoscopic Past."

On a flight out of Milwaukee the next day, the plane passed almost

directly over Wisconsin Dells. The rock formations glowed a rusty red in the afternoon sun along what looked now like such a tiny, vulnerable stretch of river. A dark hairline slash at one side revealed the location of Witches Gulch where a plaque on the rock wall honors Bennett for initiating efforts to preserve the Dells. The 15 mile section of river is now owned and protected by the Wisconsin Alumni Research Foundation, which has H.H. Bennett and his stereographs to thank for the Dells being known and loved for so long by so many.

Thanks To:

Credit for the overwhelming success of 1994's 20th Anniversary NSA Convention goes to all involved with the planning and coordination of its many events. Chairman of the convention was Harry Richards, with Bob Swenson serving as both registrar and treasurer. Douglass Allen was Trade Fair coordinator, while the Stereo Theater and several other special projects involved with the convention were coordinated by Larry Hess. Bill Duggan was in charge of projection at the Stereo Theater and Robert Duncan was auctioneer at the NSA Spotlight Auction with the help of Robin and Dave Wheeler. The exhibits were coordinated by John Waldsmith and the convention program book was handled by Karen and Tim White. The NSA table at the Trade Fair was set up and run by Lois Waldsmith, who sold several cartons of *Stereo World* back issues and registered a number of new NSA members. The 20th anniversary logo was created by Bob Mannle, while David Starkman and Susan Pinsky helped with mailing information and labels and John Weiler helped with general mailing and printing. Long before the convention, NSA Vice President in Charge of Activities John Waldsmith and NSA President Gordon Hoffman paved the way for the 20th anniversary celebration by locating the Milwaukee facilities and negotiating the best possible rates for both the organization and its members.

H.H. Bennett's granddaughter Jean Dyer Reese behind the counter of the museum/sales room copes with two busloads of eager collectors buying from the remaining stock of original Bennett views. There are still a few left, but this was definitely the Bennett Studio's busiest hour ever!

The design concept for the ATLANTA INTERNATIONAL 3-D FESTIVAL '95 logo is by Bernard Makison, with computer generation by Bob Mannle.

Next Year !

Make your plans now for the huge ATLANTA INTERNATIONAL 3-D FESTIVAL '95. This first combined NSA convention and ISU congress will take place from June 27th to July 3rd at Atlanta's Stouffer Waverly Hotel. A full committee coordinating the Festival (representing both the NSA and ISU) is in place and plans are well under way.

Send your suggestions, questions or comments to the following people:

For information about submitting shows to the Stereo Theater, contact ISU Program Director Ron Labbe, 15 Anson St., Boston, MA 02130 or NSA Program Director Larry Moor, 3169 Bolero Way, Atlanta, GA 30341.

General chairs for the Festival are Michael Griffith (NSA) 4316 Hale Dr., Lilburn, GA 30247 and Lee Pratt (ISU) 1017 Bayfield Dr., Huntsville, AL 35802.

The Exhibits will be coordinated by Bill Walton, 3739 Meadowlark Dr., Columbus, GA 31906.

Registration, finance, and the Festival program book will be coordinated by Marilyn Morton, 241 Sycamore Pl., Decatur, GA 30030.

Publicity will be directed by Bill Moll, 6085 Valley Stream Dr., Cumming, GA 30130 and Ed Comer, 4688 Amberwood Trail, Marietta, GA 30062.

Kodak's Depth Imaging

by John Dennis

Bright, sharp stereo images designed to compete in the world market for advertising and display applications were among the last things anyone expected to find bearing the Kodak label until samples started showing up at trade shows a couple of years ago (see *NewViews*, Vol. 19 No. 4). Those attending the NSA convention in Milwaukee were treated to several of Kodak's large and impressive lenticular 3-D images on exhibit in the Trade Fair as well as a slide presentation in the Stereo Theater explaining their creation and the commercial potential of Kodak's "Depth Imaging" technology.

While lenticular imaging techniques have improved greatly over the years, the concept has suffered from many bad examples constantly being produced and distributed in the form of post cards, point-of-sale displays and assorted novelties. The prints from Nimslo, Nishika, Image Tech and Rittai cameras have demonstrated the limits for both the depth and the popularity of lenticular images taken from only three or four angles. But they've also shown the potential of computerized printing to position the image elements for separation by the sheet of tiny plastic lenses. A number of firms around the world have invested in efforts to perfect lenticular 3-D through precise digital control of the image elements, tightly calculated multiple camera angles, and improved lens sheets. (This includes video applications like the recently introduced Sanyo system in Japan.)

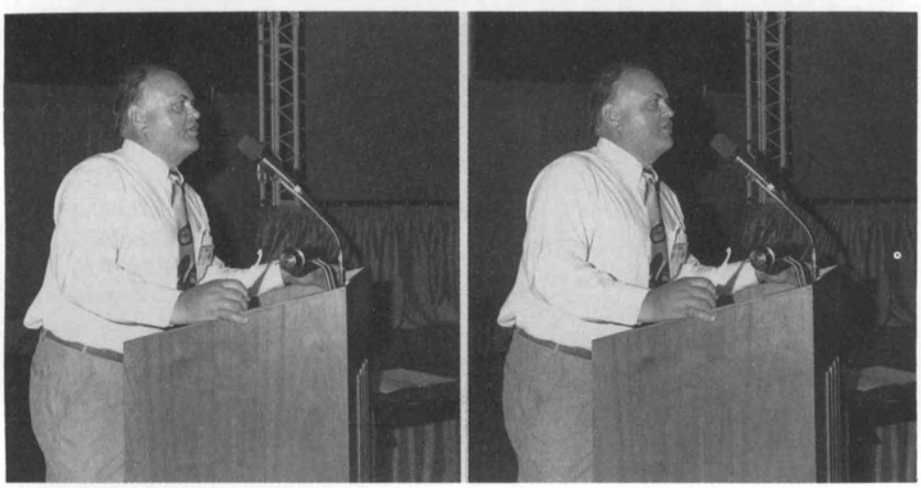
While it may seem as if Kodak has suddenly seen the light and jumped back into 3-D after callously neglecting it for nearly 40 years, the view from inside the company reveals a bit more "depth" behind the move. Senior Development Engineer Roy Taylor from Kodak's Depth Imaging Research Laboratories brought the slide show and sample lenticular images to Milwaukee and spoke with *Stereo World* about his stereo related experiences at Kodak over the past 11 years.

Mr. Taylor's interest in stereography was triggered, in fact, when he read a copy of *Stereo World* in the Kodak library in about 1983. Becoming fascinated with 3-D imaging, he started looking in flea markets for stereoviews and bought a Holmes style stereoscope. As a camera design engineer, he was involved with the Kodak disk camera and built a prototype rig to hold and synchronize a pair of disk cameras for stereo, mounting the print pairs on cards to view in his scope.

When Taylor's boss saw the rig, he suggested writing the idea up for Kodak's new Office of Innovation. This led to funding for a business plan based on the dual camera synchronizing frame. In the process (about 1985), Taylor met long-time Kodak employee Ed Schoonmaker who had argued for an even number of exposures on the disk camera film so that a stereo version would be a compatible design option. Marketing considerations of image size vs. number of pictures prevailed, and the disk cameras were designed for 15 exposures. Mr. Schoonmaker when on to design his own dual 110 rig to produce pairs of the small 110 slides for stereo projection.

About the time Roy Taylor was making some headway with a commercial design for his dual disk camera rig, Kodak decided to stop making disk cameras. But in the process he had met several people at Kodak who were interested in stereo. His next proposal to earn funding from Kodak involved the old Tri-Delta concept in which mirrors rotated image pairs 90° onto a single film frame. With the help of Kodak optical expert and stereo enthusiast Bill Ewald, he designed an optical system to fit the concept into a compact 35mm camera as well as an attachment for stereo projection of the resulting head-to-head single-frame pairs. Falling sales of amateur slide film and projectors in the 1980s, combined with uncertainty about the public's

Kodak Senior Development Engineer Roy Taylor introduces his Stereo Theater show "Kodak Depth Imaging" At the 1994 NSA convention.



willingness to use glasses or viewers for 3-D slides led to the demise of the idea.

After ideas for projects like a new View-Master format camera and a disposable stereo camera had been briefly considered, the Office of Innovation in 1990 called on Taylor to work with Roland Schindler and Scott Chase (who had been involved in separate Kodak 3-D projects) in a combined effort to come up with a practical 3-D product. After numerous meetings with various Kodak departments in search of possible ways to involve the company with emerging 3-D technologies, the group was funded to use off-the-shelf Kodak equipment and materials in perfecting an improved lenticular print system.

With a self-imposed 90 day deadline, one lenticular print was created using a 16 lens camera made from disk camera optics and another using a 35mm camera on a multiple exposure shift rail. With this success, the Depth Imaging Lab was created with Roland Schindler as General Manager and Roy Taylor as Development Engineer. The Lab has grown to employ 14 people doing lenticular 3-D projects for several clients with a variety of special needs and applications.

As those attending the NSA convention quickly noticed, these 16 x 20 inch prints have a viewing zone noticeably wider than other lenticular products. In fact it requires some side-stepping effort to find viewing positions in which parts of the image are pseudoscopic. The images are also extremely sharp in all planes and lack the jumpiness, "stutter" and ghosting of most other lenticular stereos. This is thanks to the precise, digitized positioning of the multiple image strips with nothing spilling into areas where the lenticles could separate the wrong or extra images. The wide viewing zone even makes animation possible within a stereo image or the sharing of one frame by two stereo images that change as you walk past the display. (In one sample shown, a Kodak film box revolved while suspended in three-Dimensional space when you moved your head.)

The first step in creating a lenticular 3-D image is of course the photography. Anywhere from 9 to 24 photos are taken of the scene or object using a single camera on a rail, multiple synchronized cameras, or a specially designed multiple lens camera. The Kodak group started by constructing their own rails, but now uses computerized rails from Roberts Engineering (see *NewViews*, Vol. 21 No. 2, page 28). These are loaned to photographers or studios interested in Kodak lenticular 3-D, and are easily programmed to shift the camera precisely far enough and make the correct number of exposures for a chosen subject and distance.

After processing, the photos are scanned and basic choices are made regarding cropping, subject placement within the window, and color corrections. The composite file is then created by taking samples of all the frames and arranging the narrow elements in the proper locations for lenticular fusion. This electronic composite file is then printed as a negative or positive using Kodak's LVT (Light Valve Technology) printer to provide very high resolution images. For multiple copies, positives are made from LVT negatives and the lenticular sheets are laminated to the images. Currently this alignment is done manually but an automated process has been developed. About half of the current output consists of prints for reflected light display and half transparencies for backlit display. Sizes up to 32 x 40 inches are possible with the process, for which Kodak makes its own lenticular material using a Kodak PETG plastic with a high index of refraction allowing the optimum ratio of thickness to lenticle focal length.

Along with photographic images, multiple images from Scanning Electron Microscopes can be used, as can complex, computer generated designs. Even already existing stereo pairs can be presented as lenticular prints by creating the missing "in between" images through computer interpolation based on the relative positions of features in the left and right images.On display in Milwaukee was a lenticular transparency of Theodore Roosevelt on a horse that worked well except for a small patch of distorted grass in one corner. This could make 3-D exhibits of classic stereographs (in very large sizes) possible in museums and other display situations where viewers are impractical.

Some of the Kodak lenticular transparencies on display in Milwaukee. While the actual 3-D effect doesn't show well here, the wide arc of viewability is evident. From this angle through 90° the stereo stays correct, bright and sharp. Kodak Depth Imaging remains a process for advertising and custom display applications, with no consumer availability within a reasonable price range as yet.

NEWS FROM THE STEREOSCOPIC SOCIETY OF AMERICA

by Norman B. Patterson

The Society

The annual meeting of the Stereoscopic Society of America was held June 19, 1994, in conjunction with the Milwaukee NSA convention. I can report that there was a fine turnout and members also got together for dinner all four nights (more than 40 on Friday evening).

The main order of business was the approval of an updated version of the Society's rules and operating procedures. These will be circulated in folios and all will get a chance to point out any shortcomings that may still need attention at next year's meeting in Atlanta.

Life Membership

Among the rules adopted were procedures for awarding Life Membership status to individuals who the Society deems deserving of such an honor. There have been no current Life Members since the demise of the late Fred Lightfoot. The new rules clarify the eligibility and nomination procedures and should prove useful in the future. Life Membership was, in the past, a recognition of long, dedicated, and extraordinary service to the society.

Treasurer Robert Kruse reported on the financial health of the treasury. It appears that current dues will be adequate into 1995. Proposed postal rate increases do cast a cloud on projections into the future. Kruse also stated that all of the Society officers have donated much more time and money than is reflected in the report—most particularly in telephone calls to keep the Society and the folios running smoothly.

Mel Lawson

The Society mourns the passing of Beta Transparency member Mel Lawson this past March. Several years of illness finally took their toll. Col. Lawson was, for many years, one of the leading figures in stereo photography—an activity that started well before his retirement from the military. He was very prominent in several stereo photo organizations, was widely known, and contributed heavily in time and effort at meetings and conventions (including NSA activities). We never recover from the loss of people like Mel Lawson. Our condolences go to his family and especially his wife, Dolly.

1993 (2x2)x2 Voting Results

2x2 Matched Pair Circuit Secretary Joe O'Toole reports the top vote-getters for 1993 as follows:

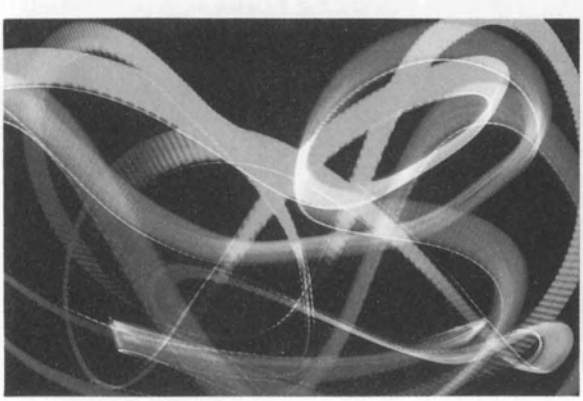
Member	Total Points
Jim Riley	126
Joe O'Toole	91
Bruce Hanson	84
Joseph Smith	80
Manley Koehler	75
Norman Peters	70

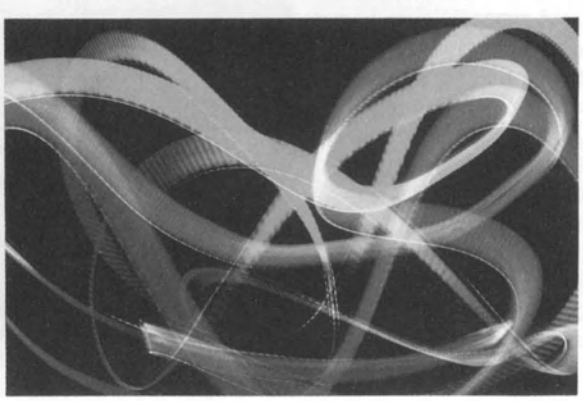
The race for Favorite Pictures was very close among several excellent stereo views. The top scoring entry was "Spring Storm" by Joe O'Toole with 23 points. This was followed by a five way tie at 20 points each by "Red Alert" and "Angels Landing" (both by Jim Riley), "Winter Scene" (by Matt Rebholz), "Waikiki" (by Bruce Hansen), and "The Harvest" (by Joe O'Toole).

Congratulations to Jim Riley for his continuing good work in leading the pack and to the other high-scorers. Everyone in the circuit deserves recognition for time and devotion to the cause and for keeping the folios moving in a prompt and orderly manner. The group is very diverse and that adds much to the enjoyment. Other 2x2 shooters would do well to get in on the action and join the 2x2 circuit.

The Stereoscopic Society of America is a group of currently active stereo photographers who circulate their work by means of postal folios. Both print and transparency formats are used, and several groups are operating folio circuits to met the needs in each format. When a folio arrives, a member views and makes comments on each of the entries of the other participants. His or her own view, which has traveled the circuit and has been examined and commented upon by the other members, is removed and replaced with a new entry. The folio then continues its endless travels around the circuit. Many long distance friendships have formed among the participants in this manner over the years.

Stereo photographers who may be interested in Society membership should write to the Membership Secretary, E. Jack Swarthout, 12 Woodmere Dr., Paris, IL 61944.





Multi-colored ribbons of pure light weave through 3-D space in one of Stereoscopic Society member John Baird's images from his Stereo Theater show 3-D ABSTRACT I&II at the NSA convention in Milwaukee. A special demonstration of his stereo light-painting techniques was arranged for Society members in one of the meeting rooms.

Two Men of Vision

and the 3-D Record of an Industry

by William Brey

They were born in the same town in Germany, but they were unaware of it at the time. It was only later in America that they discovered their common heritage when they both resided at Fritz Klein's boarding house in Brooklyn. In 1892, Ferdinand Thun and Henry Janssen decided to start a business together, manufacturing braiding machines to compete with the better known German companies. They were aided in their endeavor by the 1890 tariff that restricted the importation of foreign machinery. (The major use of braid in those days was on the lower edges of women's long skirts to protect the rich fabric from dragging on the ground.)

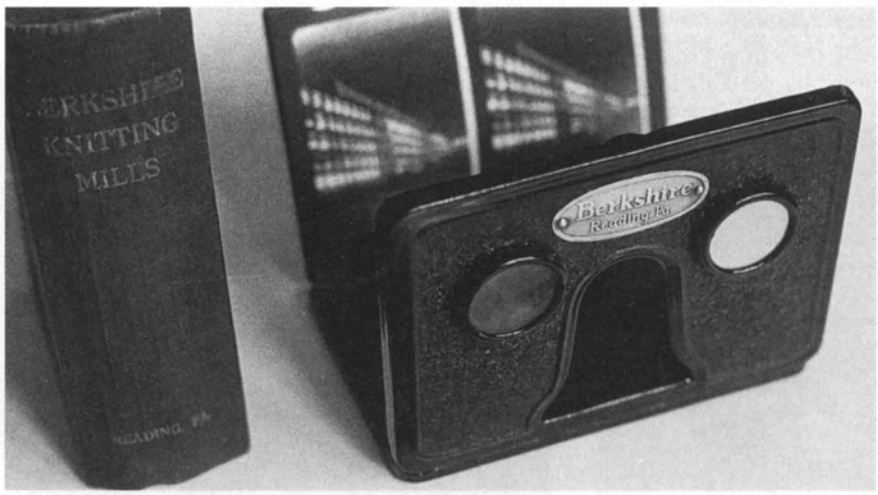
Henry Janssen and Ferdinand Thun's enterprises grew over the years in the area near Reading, Pennsylvania. Their experimentation in knitting machine design and construction led to the development of the country's first full-fashioned knitting machine, and in 1906 to the establishment of the Berkshire Knitting Mills, destined—before too long—to become the largest full-fashioned knitting operation in the world. (Full-fashioned literally meant clothing knitted to conform to the shape of the body.) In its first year the company produced 432,000 pairs of stockings. By 1955 it was manufacturing 50 million pairs a year. Their work force subsequently grew from less than 60 employees to well over 6,000.

The first stockings produced by Berkshire were made of cotton. It wasn't long after the start of this industry that experiments were begun with silk, a yarn which produced what was then considered a perfect stocking in wearability and appearance.

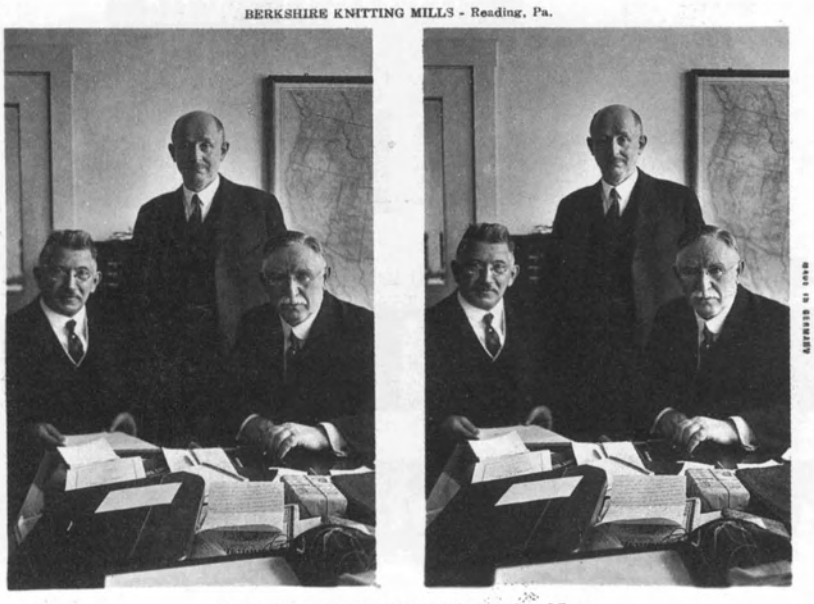
In 1924 Berkshire pioneered the introduction of rayon hosiery which had the same sheen and gloss as silk stockings. Then in 1938, Berkshire introduced the miracle of hosiery-silk stockings.

Between 1900 and 1930, numerous buildings were constructed in the complex to facilitate the company's rapid growth. The design of each building was "state of the art" for the period. The Textile Foundry, erected in 1928 and largely constructed of glass and steel, was described during its construction as "the largest (foundry) in the world under one roof, covering five acres of land."

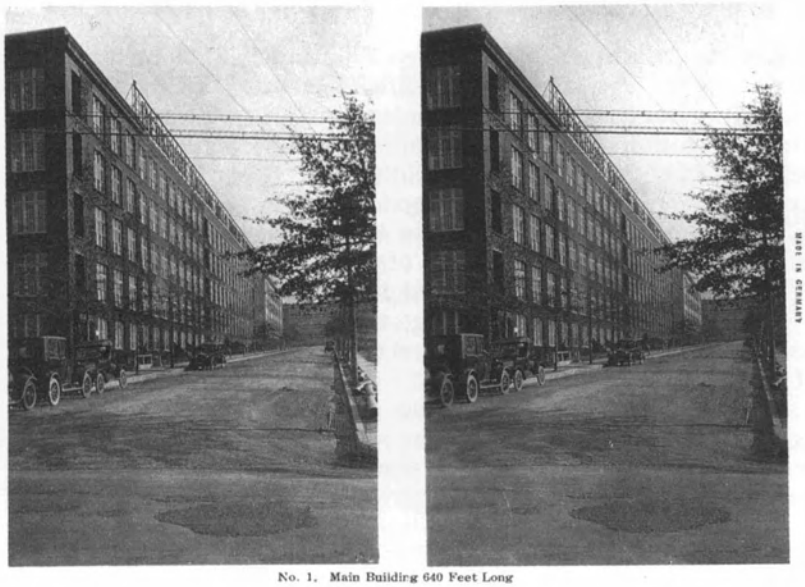
Another unusual element of the sprawling plant was the underground placement of utilities, including water tanks and light



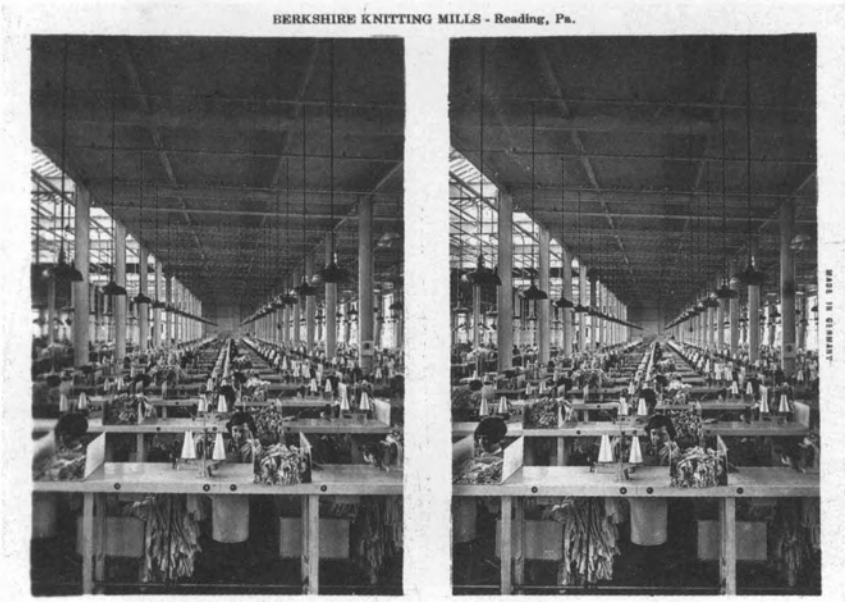
In the early 1920s, Thun and Jassen commissioned this boxed set consisting of 36 views and a stereoscope to document their Berkshire Knitting Mills. Unlike lithographed promotional sets, these are actual photographic prints on double-weight paper, produced in Germany for the compact folding metal viewer sometimes known as the Cameroscope and also sold in England under the name Camerascope. (See "British Stereoscopic Cigarette Cards" SW Vol. 17 No. 2.)



Ferdinand Thun and Henry Janssen with their Secretary and Treasurer Gustav Oberlaender. The views were photographed by Professor A. Krauth of Somerville, MA and are reproduced here in actual size. All views from author's collection.



One of several buildings that made up the Berkshire Knitting Mills complex.



There are over 250 employees at work in this dramatic stereo of just one department ("Looping") in the Berkshire Mills.

and power lines, in a series of concrete service tunnels. This progressive concept eliminated the unsightly profusion of overhead wires and poles. In addition, the company's own artesian well provided water necessary to operate the large mill machinery. In the eyes of Henry Janssen and Ferdinand Thun, environment played a key role in maintaining a successful business. This factor was not limited to the exterior environment, but continued in the design of the interiors of the industrial buildings and facilities.

The partners were extremely concerned with the welfare of individual workers and met their needs in a variety of ways. During World War I, when food and supplies were scarce and high-priced, "arrangements were made for the purchase of carload lots of groceries and coal for distribution at cost," which led to the establishment of a cooperative store for the employees. The cooperative store was later replaced by the large Delta Store, constructed in 1920 to better serve the commercial needs of workers and their families. The industrial giant provided a number of health and welfare services, including a dispensary, housed in its own building erected in 1925, which furnished medical, dental and eye care. These services had been provided as early as 1917. An insurance division covered risks to the workers, and provided attractive life insurance programs and pension plans for many employees. Other facilities that ensured the welfare of employees included the large and airy cafeteria, recreation and smoking rooms, and private parking spaces for more than thirteen hundred automobiles. Although commonplace today, these innovations were unheard of at the turn of the century.

The pair established an apprentice system so "that employees might develop the necessary technical skills and acquire the specialized knowledge needed in the many departments." These three and four year apprenticeships led to the establishment of an Educational department in 1927, which entailed four weeks of schooling alternating with four weeks of work. This marked a turning point

in mechanical training. The Wyomissing Polytechnic Institute was formally organized in 1933 and became accredited as a junior engineering college, serving both the corporation and the community as a technical school. The partners encouraged the education and betterment of their employees through the founding and maintenance of the Delta Library, a repository of thousands of technical books on the textile industry.

It was in 1933 that Berkshire started a company union in response to overtures made by the A.F.L. and C.I.O.. Ignoring a vote to allow these existing unions to take over, the company sowed the seeds of discontent that would erupt in a disastrous strike three years later.

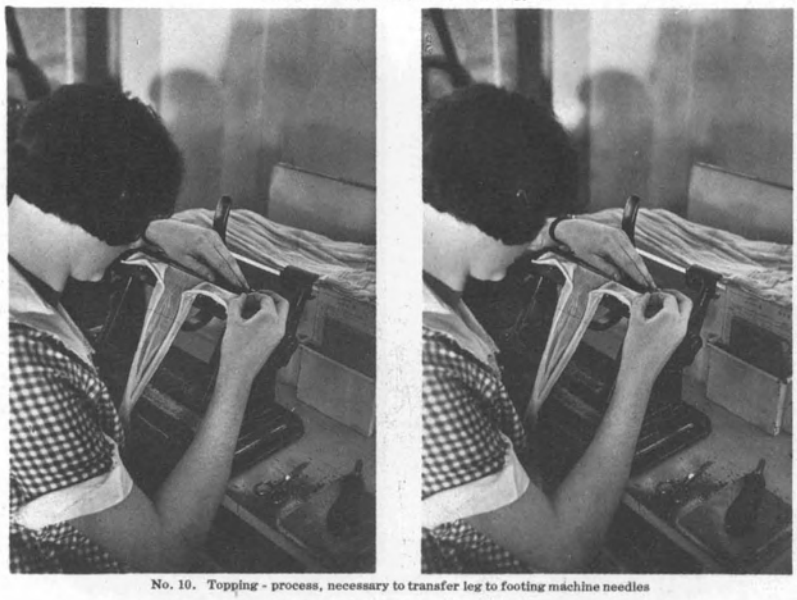
In October 1936, more than 200 persons were injured in a riot which broke out when state police charged into a crowd of several thousand strikers and sympathizers outside the main gate of the Berkshire Knitting Mills. The basis of the strike according to C.I.O. hosiery workers was that the Berkshire Company had set up a company union and was employing unfair competitive methods, chiseling on prevailing price rates, coercing its employees and working more hours than agreed to in the voluntary hosiery code. By December 1936, thousands of strikers were blocking the entrance to the plant by lying down in the street. Picketing still continued a year later.

It was not until July 1938 that the union and the company signed a three-year pact barring strikes and lockouts and retaining present wage scales. Once again peace reigned at Berkshire Mills.

Both Janssen and Thun were heavily involved in the creation of the Borough of Wyomissing, one of the first planned communities in Pennsylvania. These rare individuals brought an ideology to all of their efforts, desiring to provide for the welfare of their workers, and firmly believing that "a residential area could be compatible with an industrial area" while being profitable and healthy for workers and management. To help them realize their vision, they brought together a host of municipal planners, architects, engineers

Few series of industrial views included as many close-ups showing details of work on the product as this set from Berkshire Mills. Here the "Topping Process" is shown as one of many steps in the complex and labor-intensive creation of silk stockings.

BERKSHIRE KNITTING MILLS - Reading, Pa.



No. 10. Topping - process, necessary to transfer leg to footing machine needles

Did Berkshire employees dress this nicely everyday or were the necklace and dress worn just for Professor Krauth's scheduled stereography session?

BERKSHIRE KNITTING MILLS - Reading, Pa.

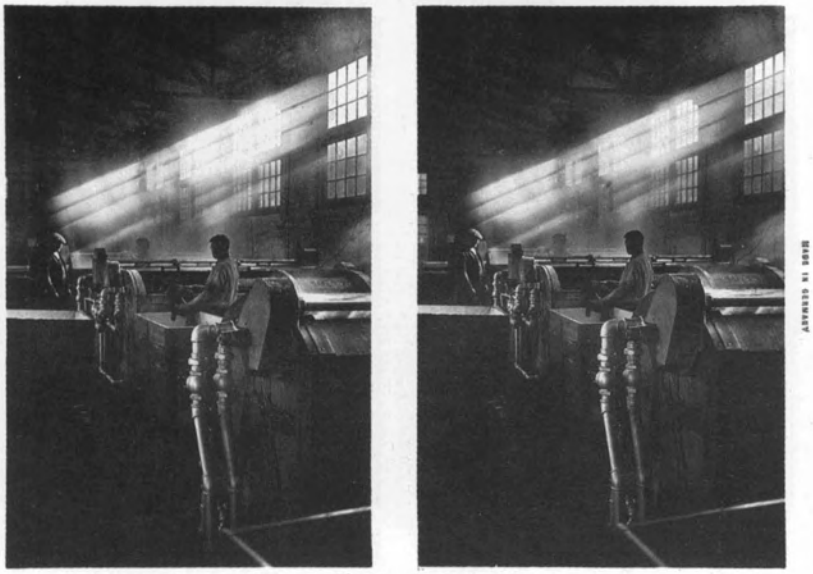
No. 15. Seaming Silk Stockings

Tags reading "Inspected by No. —" were no doubt given more personal meaning for those who saw this view from the Berkshire set.

BERKSHIRE KNITTING MILLS - Reading, Pa.

No. 26. A final inspection

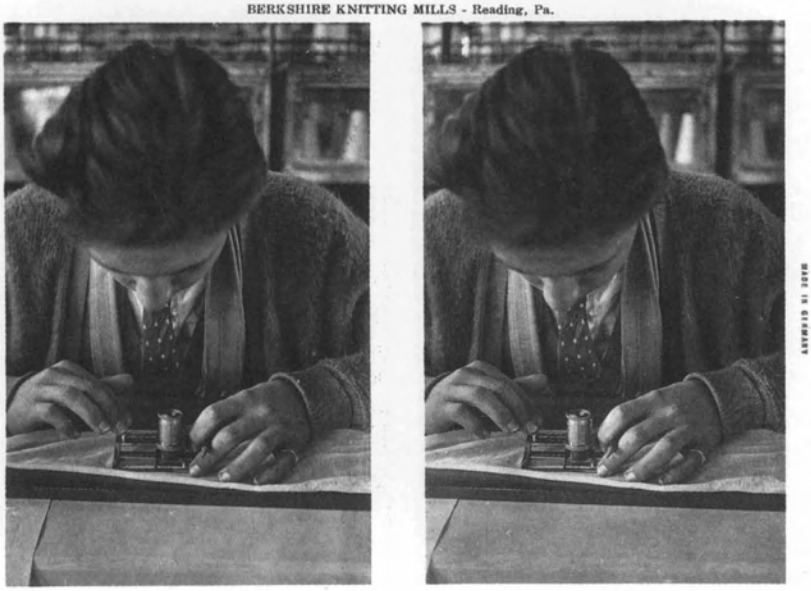
BERKSHIRE KNITTING MILLS - Reading, Pa.



No. 23. Dyeing Silk Stockings

Some of Professor Krauth's work goes beyond basic stereo documentation, as with this scene taking full advantage of the dye room's natural lighting.

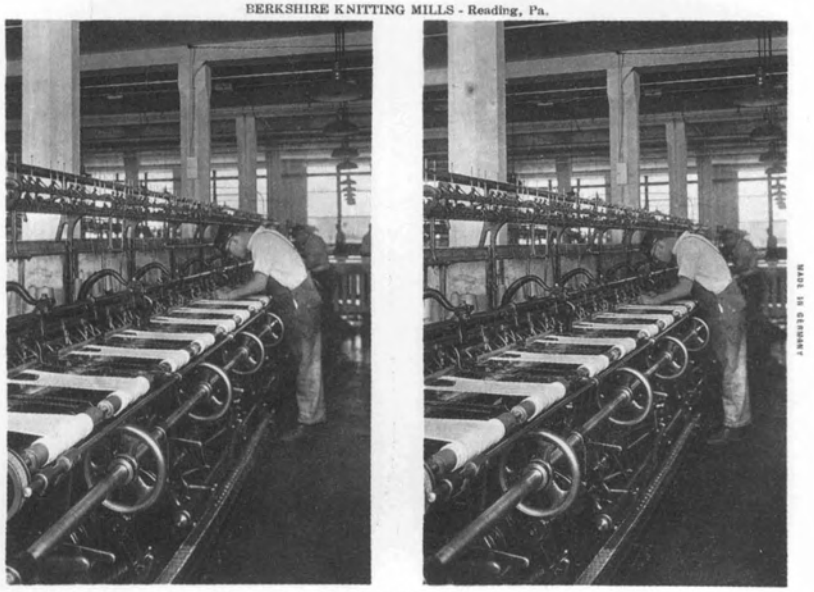
BERKSHIRE KNITTING MILLS - Reading, Pa.



No. 17. Counting courses to insure uniformity

Despite the quality of Professor Krauth's photography, no attention was paid to the stereo window when these prints were made back in Germany.

BERKSHIRE KNITTING MILLS - Reading, Pa.



No. 8. Showing the 18 sections - leg knitting completed

"Showing the 18 sections – leg knitting completed."

and designers who also agreed with their philosophy.

Rare for its day, Wyomissing was planned according to the vision of Henry Janssen and Ferdinand Thun for the benefit of its residents, most of whom were, in one way or another, associated with Wyomissing Industries. Its design was influenced by town planning in Germany, far more advanced and progressive than that in the United States. Janssen and Thun, who maintained strong ties to their homeland, employed German planners and designers to work on Wyomissing. At a time when prominent individuals, such as the younger Frederick Law Olmsted who created New York's Central Park, were founding the planning field and urging American municipalities to look to Europe for successful models, the partners were already utilizing these methods at their beloved Wyomissing.

All elements of the Borough of Wyomissing were carefully planned, including housing design, street layout, landscaping, parks and recreational and educational facilities.

The streets of Wyomissing were designed to be wide, winding, and tree-lined – a step forward from the rigid grid system so commonly found in other communities. Some of the more prominent avenues – broad and beautiful Reading Boulevard, for instance – had center islands, providing a tranquil and peaceful setting. Spacious green public parks were constructed along Wyomissing Creek, as well as within the developed sections of the town. Together with these parks recreational facilities, including a swimming pool, athletic fields, tennis courts and playgrounds, were at the disposal of all. Schools included the Wyomissing Elementary School and High School. In 1913 Janssen and Thun purchased and gave it to the library – and a sizable endowment for operations.

From its inception in 1896, with the relocation of the Textile Machine Works, Wyomissing became one of the nation's best examples of a planned industrial community. The partners' paternalism in developing such an attractive community was rarely equaled

in the early twentieth century, when most industrial towns were dirty, crowded and neglected, and most industrialists or capitalists cared little – if at all – for the working and living conditions of their employees. Dozens of other industrial communities, built throughout Pennsylvania between 1880 and 1920, were quickly constructed with little or no regard for planning, hygiene, safety or the welfare of their inhabitants.In contrast to this a promotional booklet, published in 1912, lauded the merits of Wyomissing, boasting of "air and sunshine, trees and flowers, beautiful views, clean, fragrant surroundings, good society, room for play and recreation and everything that makes life agreeable and pleasant." Much of this statement remains true today, as Wyomissing retains all of the elements which contributed to its uniqueness almost a century ago, a credit to the indelible imprint and lasting vision of Henry Janssen and Ferdinand Thun.

By the time of their deaths, in 1948 and 1949 respectively, Henry Janssen and Ferdinand Thun were integrally tied to all aspects of their companies, as well as to the community they helped found.

Henry Janssen and Ferdinand Thun's industrial and social ideals were remarkable for their time. Even though Wyomissing Industries are no longer in operation, the partners' myriad legacies live on. Henry Janssen and Ferdinand Thun made their dream a reality, and their impact still reverberates in the economic vitality and progressive character of Wyomissing today.

The Berkshire Knitting Mills no longer exist; however, some of the buildings still stand now housing Vanity Fair, one of the many discount outlets that inhabit the area around Reading, Pennsylvania.

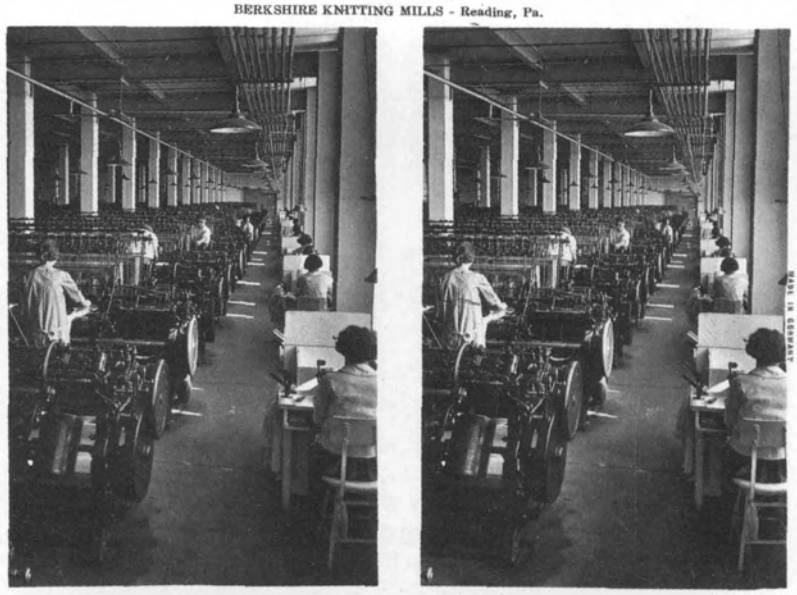
Sources

The Anniversary Story of Berkshire Knitting Mills, Reading, Pa., 1956.

50 Golden Years – James L. Hoton, 1993.

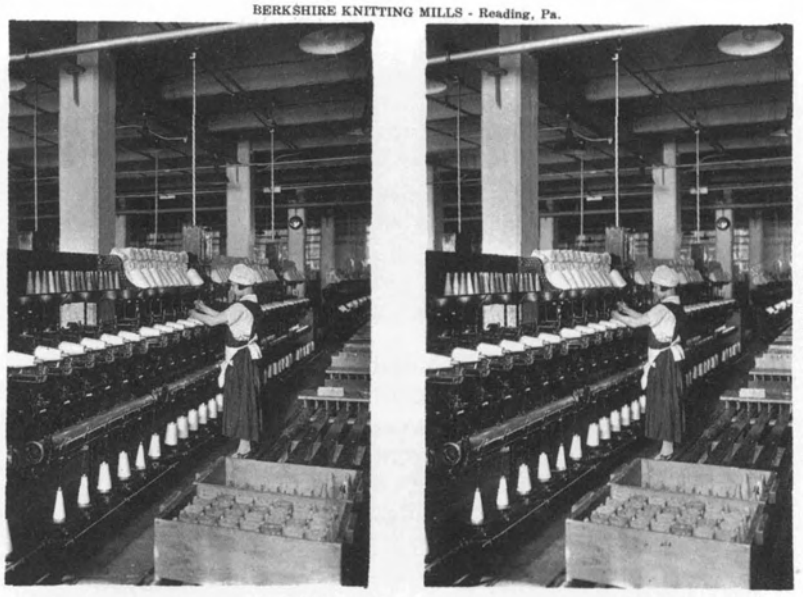
"Two Gentlemen of Vision" – Alan D. Tabachnick. *Pennsylvania Heritage*, summer 1991.

New York Times – Oct. 2, 1936, p 14; Dec. 1, 1936; Dec. 3, 1937, p 7; Dec. 9, 1937; July 16,1938, p 28.



"Section of Footing Department – each machine operated by one knitter and two toppers."

No. 9. Section of Footing Department - each machine operated by one knitter and two toppers



"Winding Room – From bobbin to cone."

No. 3. Winding Room - From bobbin to cone

"Folding and packing."

No. 28. Folding and packing

View-Master

View-Master Boldly Goes Where No Stereographer Has Gone Before

On July 20, 1969, Neil Armstrong made history with his words "That's one small step for a man, one giant leap for mankind." It was a moment of history shared with the world and a moment that continues to be shared 25 years later through the magic of View-Master.

From the beginning, plant officials knew that science and history were two of the best fields that could be covered in a View-Master packet. In the 1960s the space race was on everyone's mind and made newspaper headlines almost daily. What better way to illustrate history in the making than via the View-Master format?

In 1958, Sawyers produced the single reel B6551, "Vanguard Launching at Cape Canaveral." The photos used in this reel were taken by Air Force photographers at the cape. Security was so tight during this early phase of the space program that View-Master photographers were not allowed on the base.

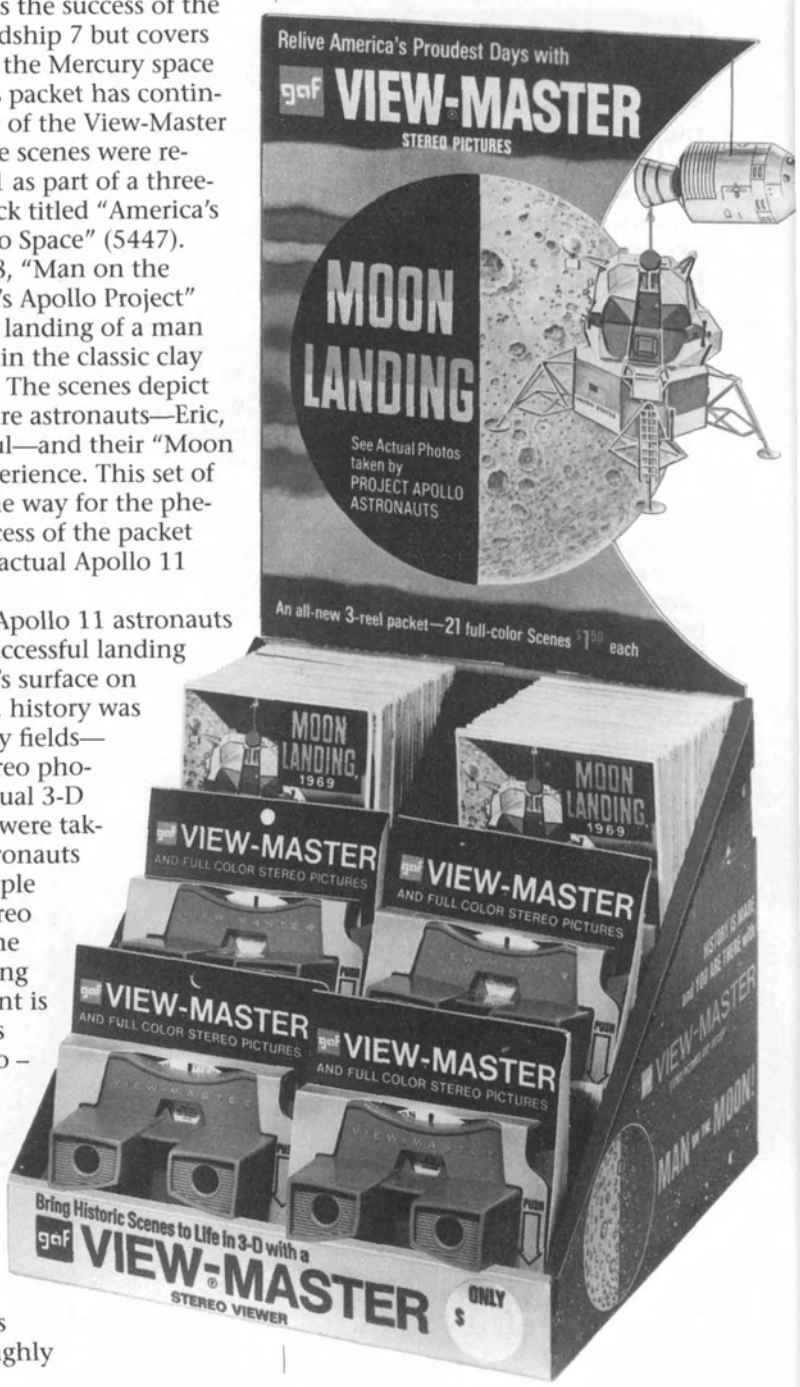
The first space packet developed by View-Master was B565, "Moon Rockets and Guided Missiles" in 1959. A total of twenty-six test reels were produced from Air Force photographs that resulted in the 21 pictures shown in the final packet. (Again, View-Master photographers were not allowed on base property.) The photographs show various missiles and rockets around the base, on the launch pad and at the time of launch as well as assorted shots of Cape Canaveral. Some of the photos taken were later considered "classified" and were not allowed to be used in the final View-Master reels.

In 1962, another space packet was introduced, "America's Man in Space – Project Mercury" (B657). This packet depicts scenes from John Glenn's historic flight on February 20, 1962. The packet not only illustrates the success of the flight of Friendship 7 but covers the history of the Mercury space program. This packet has continued to be part of the View-Master line, and some scenes were reissued in 1991 as part of a three-reel blister pack titled "America's First Steps Into Space" (5447).

Packet B658, "Man on the Moon – NASA's Apollo Project" illustrates the landing of a man on the moon in the classic clay figure format. The scenes depict three miniature astronauts—Eric, Doug and Paul—and their "Moon Landing" experience. This set of reels paved the way for the phenomenal success of the packet based on the actual Apollo 11 mission.

When the Apollo 11 astronauts made their successful landing on the moon's surface on July 20, 1969, history was made in many fields—including stereo photography. Actual 3-D photographs were taken by the astronauts using the simple "rocking" stereo technique. The packet resulting from this event is B663, "NASA's Project Apollo – Moon Landing 1969." Combining both stereo and non-stereo archival photos, the advent of this packet was highly

Store display box for the 1969 Moon Landing packet, B663.



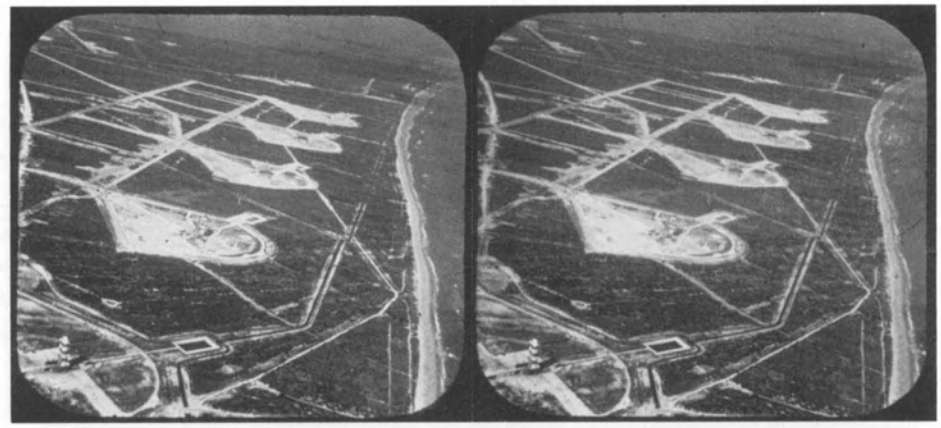
promoted before the Apollo 11 capsule ever touched down. Special moon landing promotions were set up in stores all over the country using preliminary non-stereo space shots. The Project Apollo packet was in stores within a month of the event and it became one of the best selling packets in View-Master history. The packet was re-introduced in 1991 as a blister pack titled "Apollo Moon Landing" (5446).

Because of the extreme interest and the overwhelming success of the U.S. space program, GAF decided to produce a special View-Master gift set based on the history of the manned space flight program. The set was titled "A Step Into the Universe" (B664). It contained 10 reels, a tan Model G viewer, a printed sheet showing the log of the Mercury, Gemini and Apollo space flights, and a 45 RPM record narrated by Walter Cronkite. This was all packaged in a special box with a lenticular picture on the front depicting an astronaut on the moon.

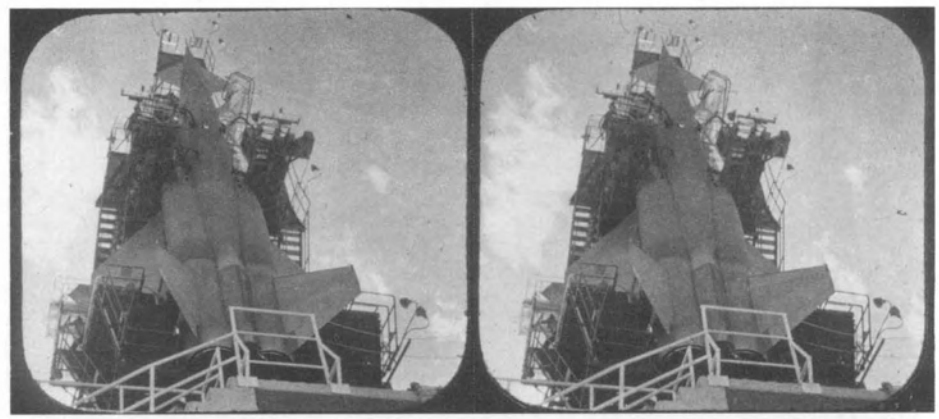
Other space titles were planned but never got to the final packet stage. Stereo pictures taken by View-Master of the Apollo 14 blast-off and moon stereos taken by the Apollo 15 crew were not used. The Apollo 15 stereos are especially interesting because they were actually taken during the mission.

Scenic packets were made of the "U.S. Spaceport" in Florida (B662); "U.S. Spaceport – John F. Kennedy Space Center NASA" (J79 and 5289); and "NASA Kennedy Space Center's Spaceport U.S.A." (5358). Also, "NASA's Manned Spacecraft Center" in Houston (A425) and subsequent blister pack "Lyndon B. Johnson Space Center" (5082). Packet J79, "U.S. Spaceport" was issued both as a standard and a blister pack.

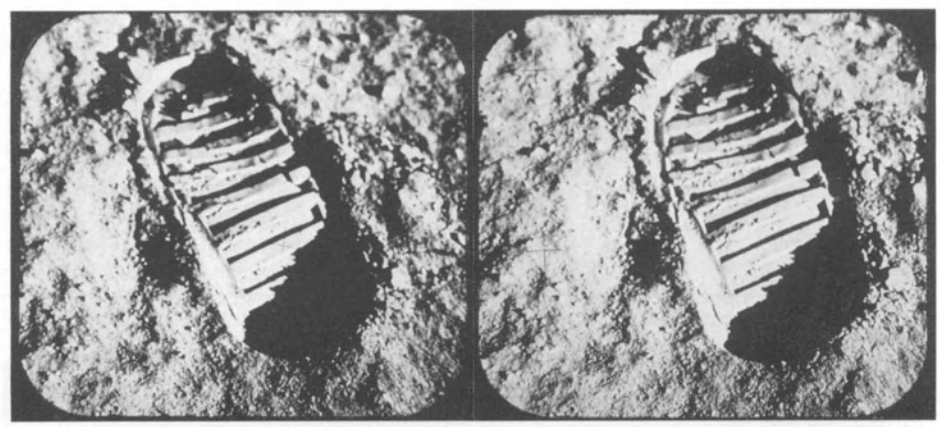
In 1982, View-Master developed a new packet dedicated to the space shuttle program. "Era of the Space Shuttle" (M36). This title was continued into the blister style packet and is now known as "The Space Shuttle – the Practical Uses of Space – NASA Space Center" (4079). Stereo scenes from several different shuttle launches are shown in these two packets.



An aerial photo of Cape Canaveral restricted by the Air Force after the test reels for packet B565 were reviewed.



Rocket on launch pad in the early days of the space program. (Packet B565)

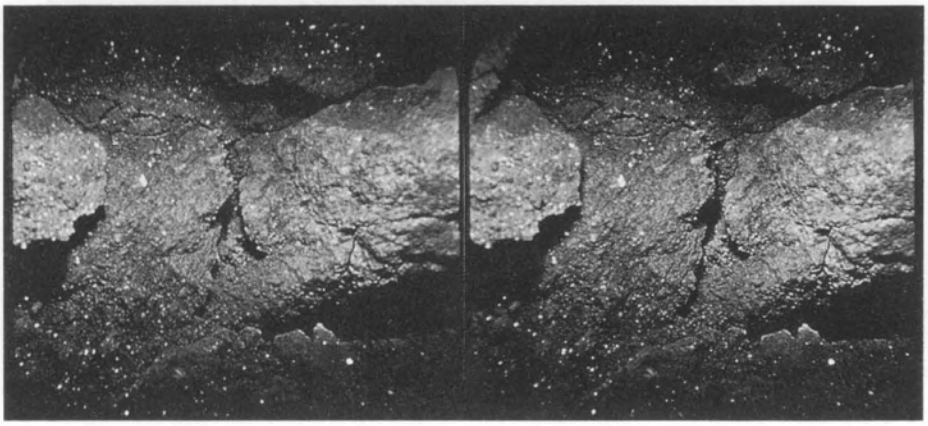


Apollo 11 stereo of the famous footprint in the lunar dust. (Packet B663)

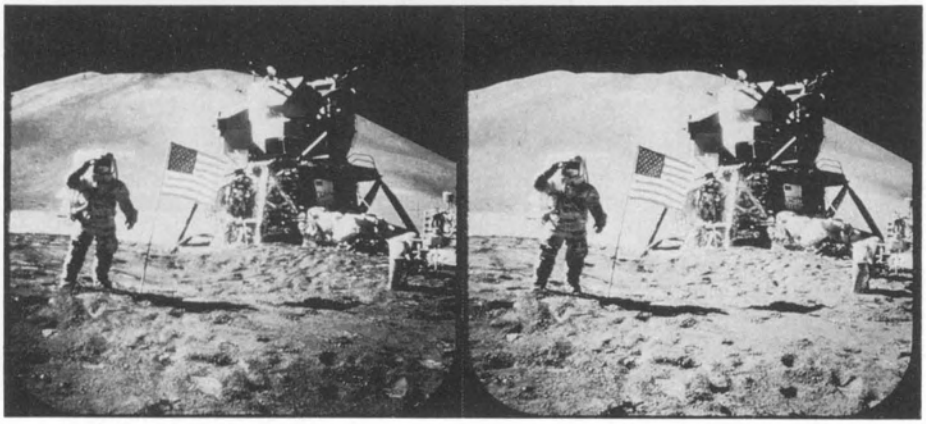
View-Master's popular science series also included a packet dedicated to astronautics. "The Conquest of Space" (B681) first debuted in 1968 with scenes from the Mercury space as well as pictures of various rockets and the Russian Sputnik program.

Related packet H13, "National Air and Space Museum" shows various space memorabilia on display at the Smithsonian Institution in Washington D.C. Among the pictures shown are John Glenn's Friendship 7 capsule and an Apollo lunar rover.

Among the space related View-Master items in our collection are two special reels of "NASA's Apollo Project – Moon Landing 1969." These two reels (numbered CBS-1 and CBS-2) contain actual moon



Apollo 11 stereo of moon rocks. (Packet B663)



Apollo 15 moon stereo from a reel never issued.

trip photographs from the Apollo 11 mission.

Two of the space packets were released in the talking format. They are "Apollo Moon Landing 1969" (AVB663); and "Project Apollo – NASA's Man on the Moon" (AVB658).

Space continues to be the final frontier and View-Master's dedication to this subject has given us the only commercially available stereo history of these amazing exploits. From early rocket experiments to the space shuttle program—it's all documented in 3-D thanks to the efforts of this fascinating company.

NSA THREE REEL PACKET

NSA PORTLAND 89

CELEBRATING 50 YEARS OF VIEW-MASTER 3-D

NSA View-Master 3-Reel Packet Still Available!

Reels A & B contain scenes from some of the programs presented at NSA PORTLAND 89, the 15th annual NSA convention. Reel C is a collection of scenes from several View-Master "DR" and Plant Tour reels.

Packets are $6.00 including postage from NSA, Box 398, Sycamore, OH 44882

Collector Note: Upcoming Scenic Releases

Charley Van Pelt, NSA member and noted View-Master stereographer, has informed us that several new scenic titles are currently in the works and will be released in the near future.

GRACELAND – Elvis Presley's home in Memphis, TN, was photographed by Charley Van Pelt in June. This packet has several interior shots including a picture of Elvis' grave site. The reels will be sold exclusively at Graceland but collectors will be given ordering details on completion of the project in early 1995.

AIR FORCE MUSEUM – Wright-Patterson Air Force Base is home to the official U.S. Air Force Museum. This museum and its exhibits have available in View-Master format for many years, but all new views taken over the summer by Charley Van Pelt and Wolfgang Sell highlight a new version of this packet. Available in the spring of '95, ordering information will be forthcoming.

INTREPID-AIR-SEA-SPACE MUSEUM – New York City, is home to the Intrepid Museum. A first time ever packet is in production now and will be available in November, 1994. Produced by an independent photographer, ordering information will be available shortly.

BRANSON, MISSOURI – "home" of many country-western stars is brought to life in a new packet by another independent photographer scheduled for production in spring, 1995. Ordering information will be available when the project is completed.

NSA 20th ANNIVERSARY REEL – This one you don't have to wait to order. The limited edition reel commemorates the 20th anniversary of the NSA and *Stereo World* with seven scenes from anniversary issue Vol. 21 No. 1. A major share of the profits will be turned over to the NSA. The price is $1.90 per reel plus 50¢ postage and handling. To order or for more information contact Charley Van Pelt, 1424 E. Mountain Rd., Glendale, CA 91207.

Cover illustration from STEREOGRAPHERS OF THE WORLD – AN ANNOTATED CHECKLIST by T.K. Treadwell and William C. Darrah. Two volumes, 800 pages, over 13,000 entries. Available softbound for $50, on disk for $10 from NSA Book Service, 4201 Nagle Rd., Bryan, TX 77801.

13,000 Stereographers

Review by John Dennis

The thought of attempting a biographical listing of virtually everybody who ever picked up a stereo camera is more than daunting, it's literally hard to imagine. And yet a two-volume work, *Stereographers of the World – an Annotated Checklist* that very nearly does that now exists, thanks to former NSA President and current board member T.K.Treadwell. Its 800 pages include the names of over 13,000 stereographers, with 9,000 of those in the U.S.

The concept originated about 1950 when he and the late William C. Darrah began keeping notes on the makers of the many stereoviews they had both seen. The plan was to jointly issue an annotated check-list of stereo photographers. When poor health made it impossible for Darrah to continue, Treadwell agreed to complete the work.

Expanding on the original concept, he invited submissions of names and data from collectors and institutions all over the world in compiling this monumental reference work. Rather than limiting it to a stereographer's name, town and date, as many of the basics as are known about individual photographers are included. In the most complete entries, these include name, location(s) of operation, subjects covered, time span and assessment of work, other biographical details, and data on photo and mount format, scarcity, etc. For many entries, all that is available is a name, a town and an estimated date. Treadwell estimates that about 30% of the data is from Darrah's files, 40% from his own, and the remainder from other sources. He kept Darrah's name on as co-author in recognition of his contribution to the effort and to stereography in general.

An 12-page bibliography of books containing information about stereography or stereographers (especially those which were useful in compiling *Stereographers of the World*) is followed by a country-by-country listing of stereographers and their towns. (in volume II for U.S. stereographers, this listing is by state.) The main alphabetical listings of stereographers with photographic data and biographical information fill the remaining pages of both volumes.

While the purpose of the work is to aid researchers and collectors, browsing can be interesting too. Inspired by current events, I checked and discovered that four stereographers once worked in Haiti and learned the subjects featured in the few examples of their work known.

All the data in the volumes is in computer files, making corrections and additions easy. Also, the data base can be searched for variables like town name, dates, gender, etc. Besides the softbound printed version ($50), the work is available unbound ($46) or on IBM compatible diskette ($20). All prices include shipping. Make checks to NSA, 4201 Nagle Road, Bryan, TX 77801.

ARCHIVAL SLEEVES: clear 2.5-mil Polypropylene

CDV (3 3/8" X 4 3/8")	per	100: $7	case of 1000:	$60
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16" x 20" (unsealed flap)	per	10: $20	case of 100:	$99

Russell Norton, PO Bx 1070, New Haven, CT 06504-1070
US SHIPPING: $4 per order. Institutional billing. (1993)

Pseudoscopic 3-D X-Rays

by Albert G. Richards

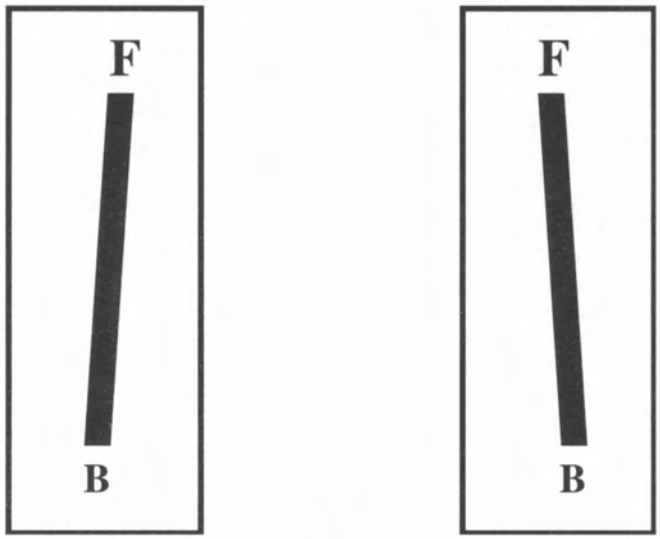


Fig. 1-A. Drawings of a black band form a 3-D image of the band, with its upper end in the foreground (F) and its lower end in the background (B).

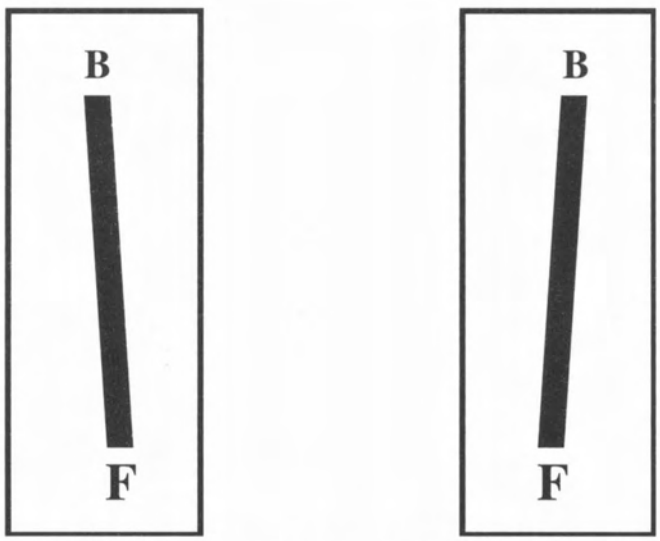


Fig. 1-B. Pseudoscopic 3-D image of the black band produced by transposing the same two drawings. The top end of the band is now in the background (B) and the lower end is in the foreground (F).

A properly made stereo slide should display a faithful reproduction of the physical world around us in which nearby objects appear in the foreground and more distant ones in the background. When looking at a scene, one's eyes naturally converge more to focus on nearby objects than on more remote details. The same converging of the eyes occurs when looking at the two images of a foreground object in a pair of stereo pictures (Figure 1A) because the horizontal distance between the two images of the foreground object (F) is less than that between the images of the background detail (B).

When the slide is assembled with the two films placed in the wrong windows of the 3-D mount (Figure 1B), a strange world is displayed in which nearby objects appear in the background and remote objects appear in the foreground. Whether this exchange in the positions of the two films was made by design or by accident, the resulting pseudoscopic image is interesting to view.

In Figure 1B, the horizontal distance between the two images of the lower end of the black band is now less than that between the images of the upper end of the band. To focus on the lower end of the band requires one's eyes to converge more sharply than on the upper end; thus the lower end is seen as the foreground detail and the upper end becomes the background detail.

The manipulation of the foreground and background objects in pseudoscopic imagery does have

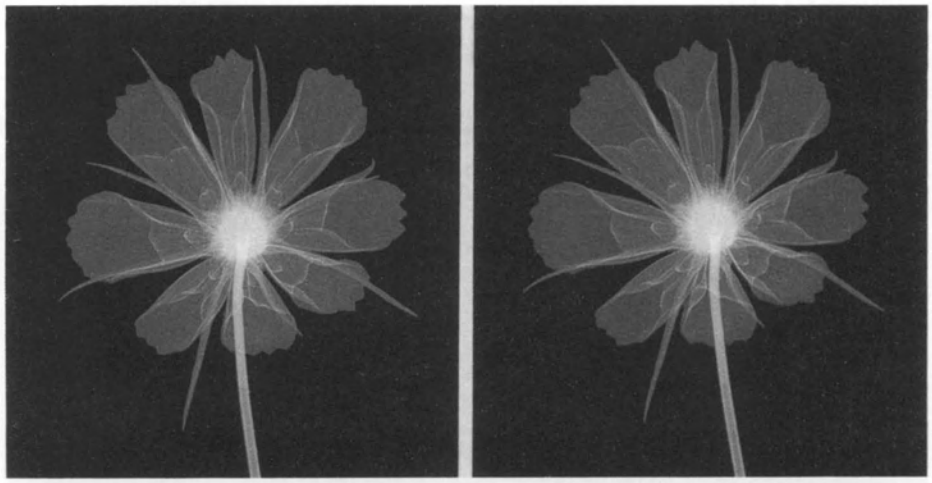


Fig. 2-A. Normal 3-D image of a Sea Shell Cosmos. The blossom is facing forward with the petals in the foreground and the stem in the background.

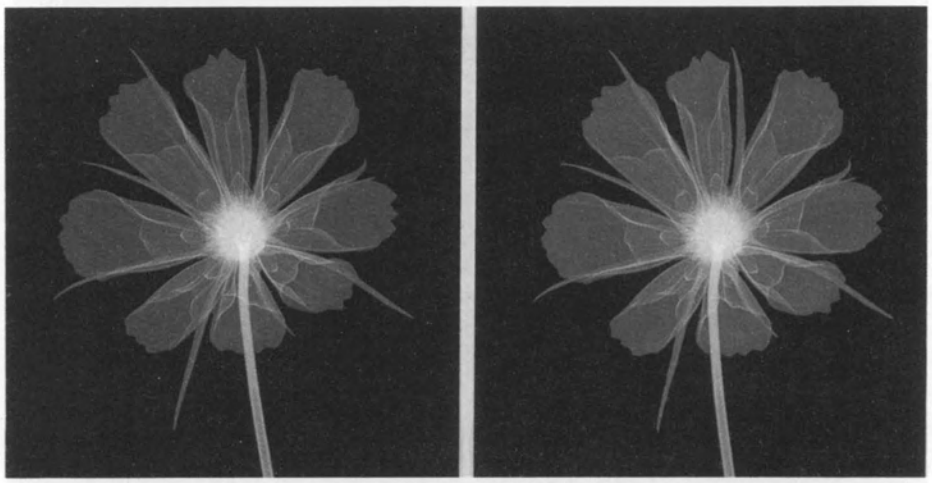


Fig. 2-B. Pseudoscopic 3-D image of the Sea Shell Cosmos produced by transposing the two images. The blossom is now facing away, with the stem in the foreground and the petals in the background.

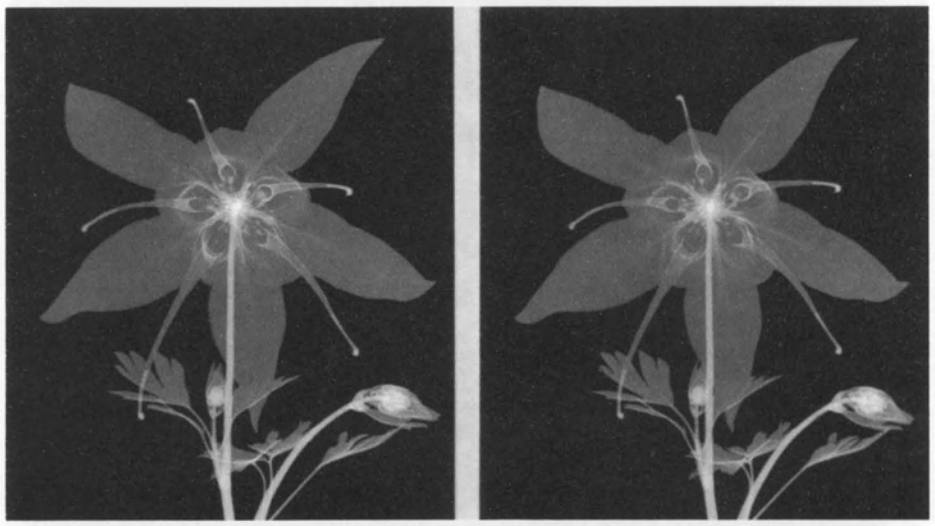


Fig. 3-A. Normal 3-D image of a Columbine. The blossom is facing forward with the petals in the foreground and the five spurs in the background.

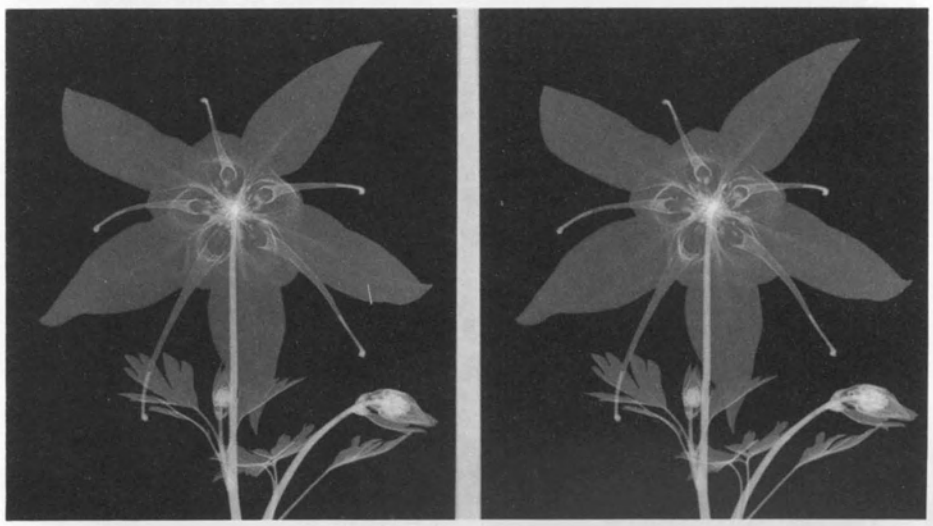


Fig. 3-B. Pseudoscopic 3-D image of the Columbine produced by transposing the two images. The blossom is now facing away with the five spurs in the foreground and the petals in the background.

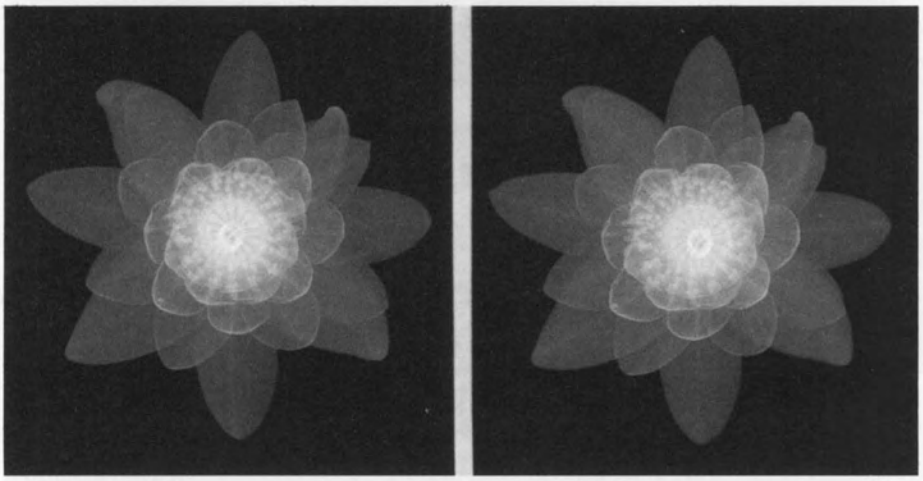


Fig. 4-A. Normal 3-D image of a Water Lily. The blossom is facing forward with the petals in the foreground and its base in the background.

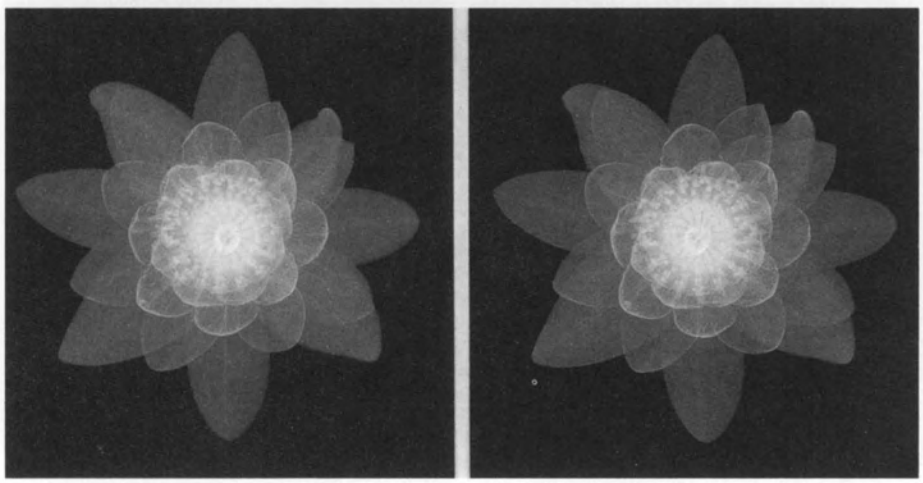


Fig. 4-B. Pseudoscopic 3-D image of the Water Lily produced by transposing the two images. The blossom is now facing away with the base of the flower in the foreground and the petals in the background.

limitations in 3-D photography. A background object or detail that lies behind an opaque foreground object in the photographs can never be made to appear in the foreground through pseudoscopic manipulation because its image never appeared on the films. This is why an image of the back of the head can never be moved forward pseudoscopically to appear in front of the face in a frontal picture.

This deficiency is remedied when dealing with radiographic, rather than photographic 3-D images. X-ray images of an object record all the details located throughout the entire object. In a radiograph, details from the background are available to exchange places with the foreground in pseudoscopic imaging.

In an X-ray picture of an isolated flower, the background the flower is uniformly black. Its position relative to the flower is at an indeterminate location. The two X-ray images of the Sea Shell Cosmos flower in Figure 2A constitute a stereo pair and *all* details of the flower appear in both pictures When viewed in normal 3-D, the flower is seen facing forward with the details of the center of the flower and the stem appearing in the background. In Figure 2B, the position of the two films has been exchanged and the flower is seen from behind as a pseudoscopic image, with the stem and body of the flower in the foreground and the front of the flower facing away toward the background. Thus it is possible to view stereo x-ray images of a flower from either the front or the back. This is rarely possible with stereo photographs.

The properly mounted radiographs of a Columbine blossom appear in Figure 3A. The flower faces forward, while the five nectar containing spurs are seen in the background behind the five petals. The smaller bud and most of the foliage also lie behind the stem. In Figure 3B, the two films have been exchanged in the stereo mount and the blossom now faces away toward the back while the five spurs, partially filled with nectar, are definitely in the foreground along with the smaller bud and most of the foliage. The junctions of the spurs with the main body of the blossom appear as "C" shaped images. The stamens are clearly shown to lie beyond the petals.

Figure 4A is the normal 3-D view of a Water Lily. The blossom is facing forward while the base of the flower, with its interesting spoke-like pattern, is seen in the background. In Figure 4-B, the position of the two films has been reversed and the stem side of the blossom is now in the foreground and the petals and other parts face toward the background.

Thus, with a mere exchange of the two films in a stereo mount, it is possible to view 3-D radiographs of flowers from two diametrically different points of view. This same effect can be achieved by merely flipping over the polarized glasses and viewing the images with the temple pieces of the glasses extended toward the screen.

(Glass mounted stereo slides of floral radiographs can be obtained from the author at 395 Rock Creek Drive, Ann Arbor, MI 48104.)

SIS Update

by John Dennis

The Nuts & Bolts of Stereograms

With so many programs for creating single-image stereograms now floating around, it was about time somebody did an up-to-date "how to" book covering them. Exactly that and more has now appeared from computer graphics publisher Waite Press in the form of *Create Stereograms on Your PC – Discover the World of 3D Illusion* by Dan Richardson.

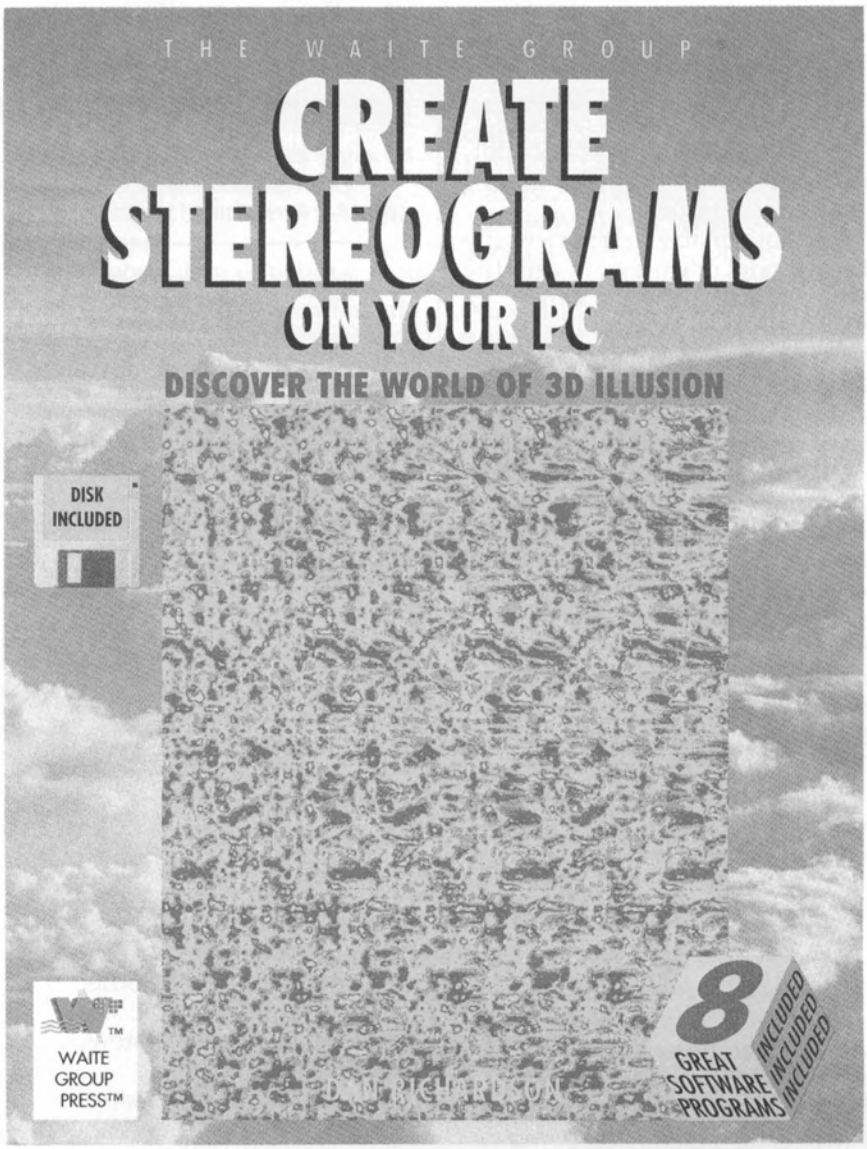
Single Image Stereograms continue evolving into an increasingly sophisticated computer art form with far more program and imaging choices involved than in 1992 when Andrew Kinsman wrote the first text of this sort, *Random Dot Stereograms*. With SIS books, posters, cards and calendars selling in the millions, computer graphics enthusiasts have increasingly become interested in creating impressive stereograms on their own screens.

Create Stereograms on Your PC provides all the nuts and bolts of constructing professional quality stereograms, covering all the different types from text stereograms to random dot, image-mapped and icon-based. An accompanying disk features seven graphics software tools for any IBM compatible computer and includes demonstrations and instructions for programs like MindImages, RDSGEN, DDS Draw, SHIMMER, and Dave's Targa Animator. Also included are instructions for ray tracing stereograms with shareware programs like Fractint, POV-Ray, and Polyray. The 200 page book is literally packed with illustrated, "user friendly" information on how various image generating techniques can be used and combined, on the different capabilities of various programs, and on avoiding common pitfalls in constructing easily viewed stereograms.

The fact that the book deals with "do-it-yourself" images created on home computers doesn't mean the results can't be equal to anything being commercially produced. A "Gallery of Stereo Illusion" presents 22 full page, black & white and color stereograms illustrating the various programs and techniques covered in the book. Unlike the book's many smaller stereograms illustrating steps or problems in the creative process, these are among the best of each type to be seen anywhere. At least two are superior to the best you'll find for sale in any book store or card shop.

"Out and In" flows a marbled, red-blue-chartreuse background into a deep, smooth sided hole and back out a double chambered opening who's crater-like lip extends out through the window. It's a fascinating study in curved topology that invites your eyes in to roam around for far longer than most stereograms. It was created

CREATE STEREOGRAMS ON YOUR PC by Dan Richardson. Waite Group Press, 1994, 7 x 9" softbound, 200 pages $26.95 with software disk. Available in bookstore computer sections or by calling (800) 368-9369.



with a Fractint depthmap using a POV-Ray imagemap of layers of granite and marble textures.

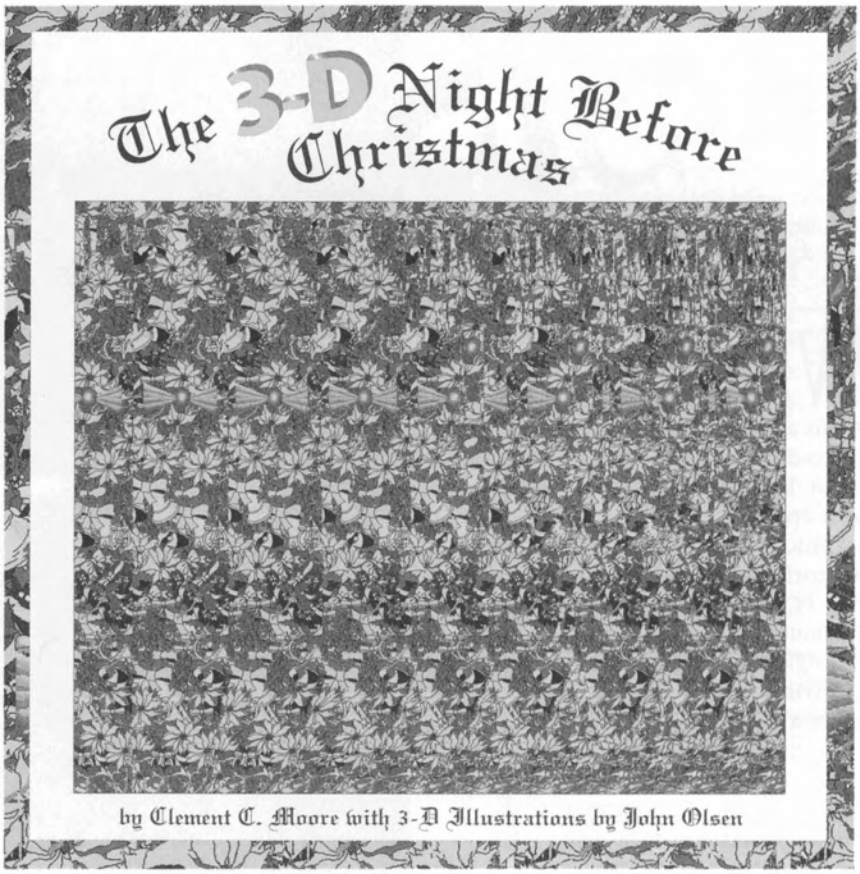
"SISpiral" is unlike all the other popular stereogram spiral designs, and is easily the most exciting stereogram to be published in some time. Fusing the dots above the upper right of the image, you find your eyes near the top of a wide but steep spiral surface, just beyond a ledge at the plane of the page. Starting down the counterclockwise spiral, which shows a little less than one complete twist, you discover when you reach the ledge that it's become part of the surface and that you can continue descending for another two and one-half cycles or so. The deeper you go, the steeper the ramp gets and the more your eyes go from fusing one-inch dot separation to parallel, to extreme divergence. It's a real test of free viewing skills, and its done in classic, black and white random dots. The depthmap is by Fractint, dots by RDSGEN. (To ever reach the bottom of the spiral would probably involve crossing the event horizon of a random dot black hole from which your mind could never escape!)

For those unable to free view, the disk includes one program with the option of displaying the stereograms on screen as anaglyphs. What's missing is any software for Mac users, which is ironic in light of the fact that Dan Dyckman's stereograms in the the May/June 1990 *Stereo World* which inspired the commercial SIS explosion in the first place were created on a Mac.

Richardson opens the book with very helpful chapters on stereo vision and the history of stereo imaging from Wheatstone to single-image stereograms. The latter discussion includes mention of Dan Dyckman's 1990 *Stereo World* article and observes: "this article was the first exposure to SIRDS for many of the people now producing them commercially, including Tom Baccei of N.E. Thing."

The Third Eye

MAGIC EYE III from N.E. THING Enterprises, published by Andrews and McMeel, 1994, continues the series of nearly flawless single-image stereogram books that have experienced such staying power on best-seller lists and total sales in the millions. While there are some fine images inside, the cover stereogram of number III is easily the best of the three and in fact may be the best cover image on any SIS book yet. The colorful, multi-surface image pulls your eyes into its interior where they'll want to roam around for a while.



THE 3-D NIGHT BEFORE CHRISTMAS – text by Clement C. Moore, stereograms by John Olsen. 3-D Revelations Publishing 1994, 32 pages, 15 images. For availability contact 3-D Revelations, 537 Newport Center Drive, Suite 282, Newport Beach, CA 92660.

There's an element of whimsy and humor in several images, including one teddy bear stereogram that may start a tradition of its own or even a spinoff series. Besides crediting everyone involved with N.E. THING's wildly successful images, *MAGIC EYE III* actually includes them in a wallpaper-effect team stereogram! The floating heads, each fusing into tiny stereo portraits via different angles for each image in the row, include NSA member Ron Labbe who created one of the other stereograms in the book. *MAGIC EYE III* is $12.95 at bookstores EVERYWHERE.

The MAGIC EYE newspaper stereogram feature is now appearing in about 200 papers, from major ones like the *Chicago Sun Times* to the Zanesville, OH *Times Recorder.* Locations familiar to those who attend NSA conventions include The Manchester, NH *Union Leader,* the Fort Wayne *News Sentinel,* the Milwaukee *Journal,* and the Atlanta *Constitution-Journal.* Internationally, the stereograms appear in papers as unlikely as the Istanbul, Turkey *Milliyet cocu* and *El Comercio* in Lima, Peru.

The Blue Mountain Collection

Three different "5-D" stereogram books are now available from Blue Mountain Press, consisting largely of the images appearing on the company's line of cards by Stephen Schutz and Susan Polis Schutz (Vol. 21 No. 1, page 41). The one most easily found in stores is *Endangered Species in 5-D Stereograms.* Most of the 13 images in the book use elements of the natural habitat of the animal being shown as the background making up the stereogram. With paragraphs about the animals

on the left-hand pages, the images are on the right-hand pages. Probably the most effective are the Manatee swimming calmly through the water and the Alligator charging out of an innocuous background of ferns and flamingos. Like the others from Blue Mountain, the book's use of stereograms in exploring a specific theme is an encouraging sign.

Love in 5-D Stereograms with images by Stephen Schutz and poetry by Susan Polis Schutz is literally a book full of hearts and flowers—they make up many of the backgrounds which fuse into yet more hearts and flowers! The images are all simple and direct, and while they offer little challenge to the hard core stereogram enthusiast, the ease of fusion makes them accessible to even first-time free viewers. Most of the large (8½ x 12") images are on the right hand page with a short poem relating to the image on the facing page. The book, with its pink cover, looks clearly intended as a gift item and it certainly contains fewer calories than a box of candy. A loving relationship requires keeping both eyes open, and *Love in 5-D Stereograms* provides a special reward for doing just that. It also provides several references to the NSA and *Stereo World* in the context of promotional blurbs on the jacket and introductory pages from Sheldon Aronowitz and David Hutchison. Even your reviewer finds himself sharing the back of the jacket with, of all people, Leonard Nimoy!

Reach for Your Dreams in 5-D Stereograms features several U.S. cities and geographical attractions in stereograms including wallpaper effect horizons and foregrounds. The theme here is rather loose, and the images are simple and very easy to fuse. This would make a good introductory book for someone learning to free view, and it includes many of the promotional blurbs mentioned above.

For information on availability of any Blue Mountain Press books, cards or calendars contact Blue Mountain Arts, Inc., PO Box 4549, Boulder, CO 80306, (303) 449-0536.

The SIS Before Christmas

Story books illustrated with single-image stereograms are likely to be the next phase in the stereogram publishing business. The first evidence of this was the appearance in stores of *The 3-D Night Before Christmas* by John Olsen from 3-D Revelations Publishing. Fifteen stereogram scenes from the classic tale illustrate the original text by Clement C. Moore.

Although most of the images are fairly simple, fusion can be a little tricky in some due to the relatively large graphic elements that make up the clever backgrounds. These include candy canes, bows, stockings, bells, snowflakes, Santa faces and toys. Even medium size details become difficult to fuse when they are nearly the same size as the elements that make them up. This is especially evident in images like the two that show stockings hanging on a fireplace.

Two that work very nicely are the one of Santa emerging from the chimney (an image made up of bricks) and the cover stereogram looking into the house from outside. This one appears to be constructed of a gift wrap pattern and fuses beautifully into several planes of smoothly rounded objects - demonstrating the potential for SIS greeting cards.

Artist John Olsen is mentioned by Dan Richardson (in *Create Stereograms on Your PC*) as discovering the principle of single-image stereograms independently from Christopher Tyler, in 1988, and one of his Infix Technologies images is included in the Gallery section of Richardson's book. *3-D Night Before Christmas* publisher 3-D Revelations is scheduled to release another SIS story book titled *3-D Bible Stories*.

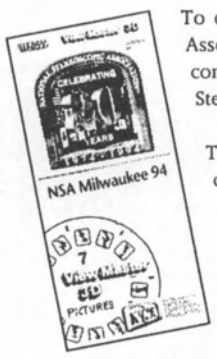
Generic 3-D

The closest thing yet to a generic SIS book is *Ultra 3D* from Montage Publications. Only the most familiar subjects and treatments are included, although none are badly done and some are very good. If this had been published ten months ago it would have been a sure hit, but things change fast in the brave new world of 3-D. With its now so familiar looking images, it may be the first SIS book to be found on the bargain table. For current availability, contact Montage Publications, 9808 Waples St., San Diego, CA 92121.

Calendars

Every publisher with a SIS book has also released at least one 1995 calendar. Some, like N.E. THING have also published small desk calendars. At least two publishers *without* books (as far as we know) also have calendars. One is *3-D Hidden Visions* from Longmeadow Press, using images by N.E. THING. Another is a small desk calendar called *Power Vision* from Day Dream D Publishing.

SPECIAL NSA 20TH ANNIVERSARY VIEW-MASTER REEL LIMITED EDITION COLLECTORS SET



To commemorate the 20th Anniversary of the National Stereoscopic Association, we have produced this special 7-Scene View-Master Reel containing 3-D scenes from contributors to the 20th Anniversary Issue of Stereo World.

The 7-Scene View-Master 3-D Reel comes in a folder with descriptive copy and a brief history of the National Stereoscopic Association. We hope that this format might be used as a companion to interesting future articles appearing in Stereo World.

A major share of the profits will be turned over to the NSA. The cost is $1.90 per set, plus 50¢ postage and handling.

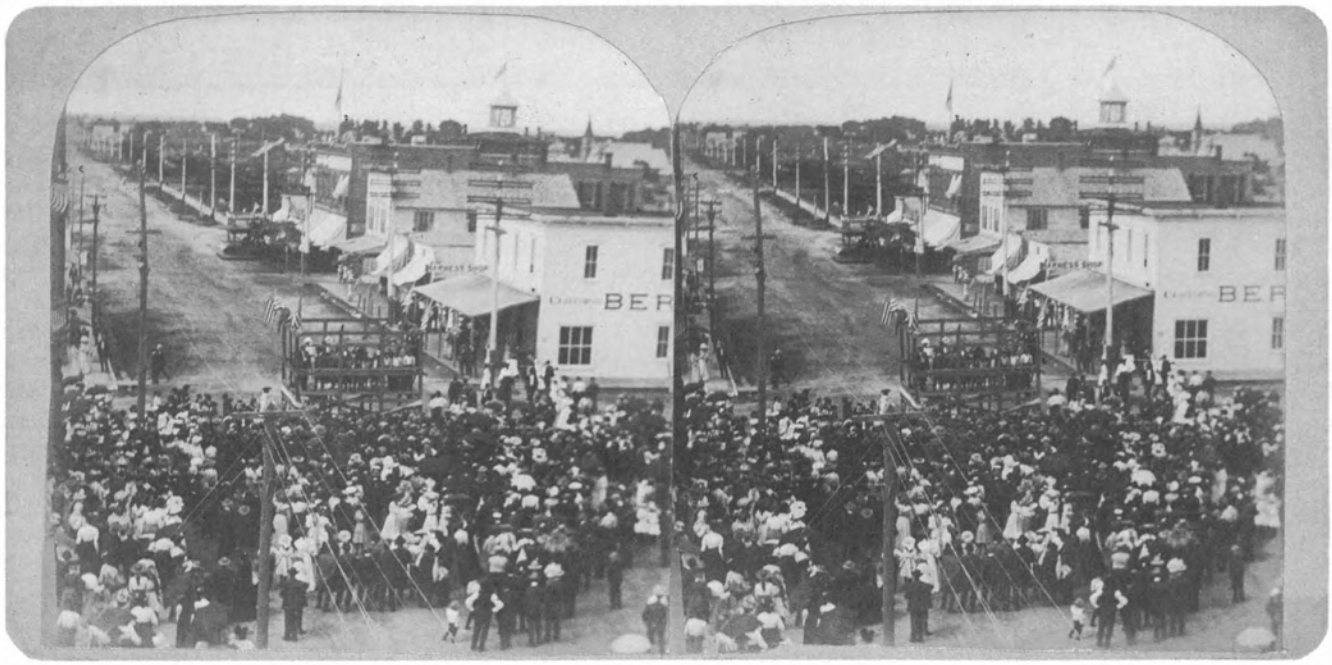
Send order to:

Charley Van Pelt
1424 East Mountain
Glendale, CA 91207

CAN YOU IDENTIFY THE SUBJECTS OF THESE VIEWS?

by Neal Bullington

The Unknowns

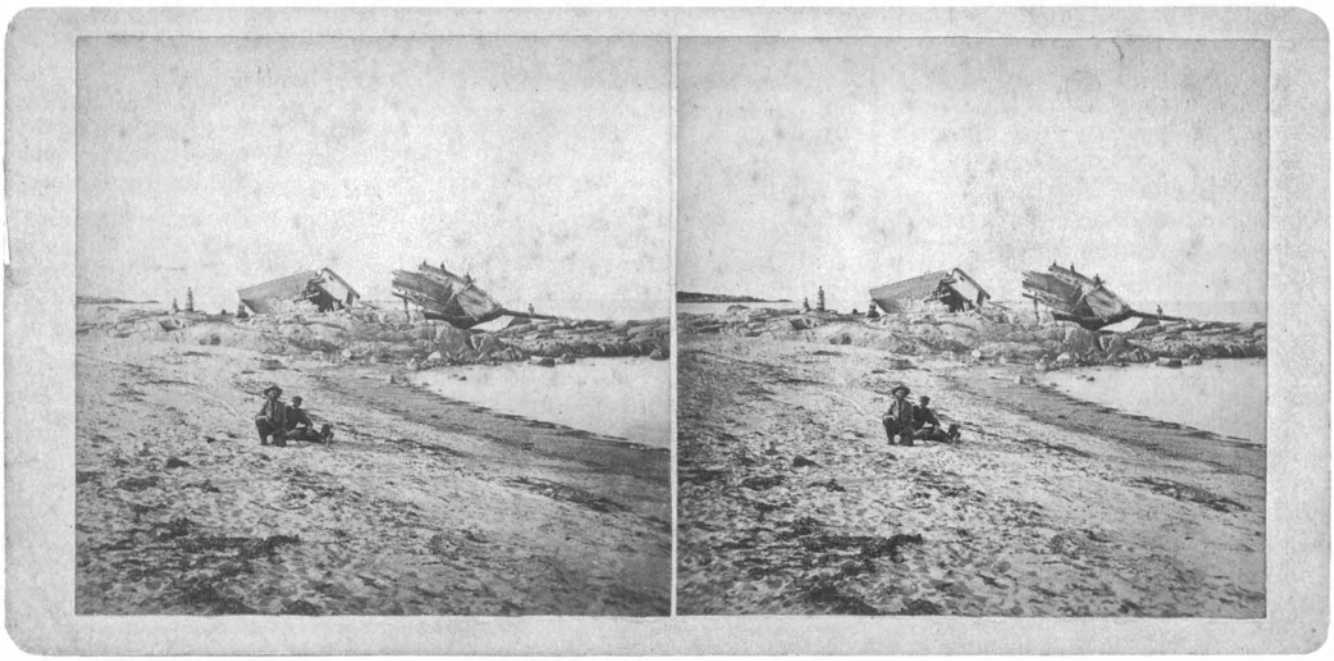


Those who have been members for quite a while may recall that in the Jan./Feb. 1983 issue we published a view from the late Earl Moore of the "Price Cadets Aboard the Milton S. Price". The scene was subsequently identified by Eric Stott as being near the Onondaga County Courthouse in Syracuse, NY. However, no information on Mr. Price or his cadets ever surfaced. Recently we received a similar view for identification. On the back of the view was the following:

> View of the "Price Cadets" on board the "Milton S. Price", on the occasion of their first annual picnic, given through the generosity of the gentleman whose name they bear. The beautiful white team of Mr. Price is seen on the right.

Evidently Mr. Price was a local businessman who sponsored the cadet group.

Dave Wood writes that he has received an identification of his view, which was printed at the top of page 24 in the Jan./Feb. '94 issue. The stone buildings are the



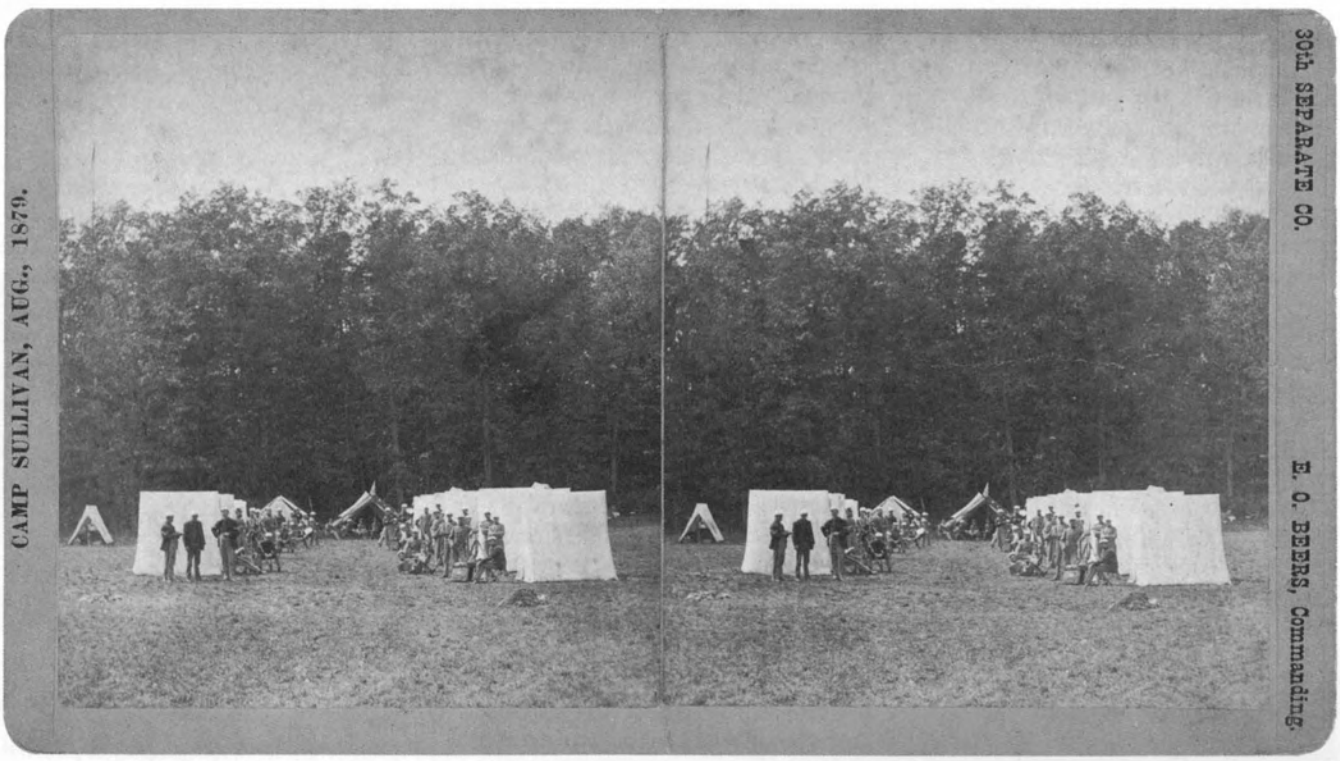
Intermediate Prison at Ionia, Michigan, just east of Grand Rapids. The photographer, Miss R.R. McLaughlin, worked out of the nearby town of Muir.

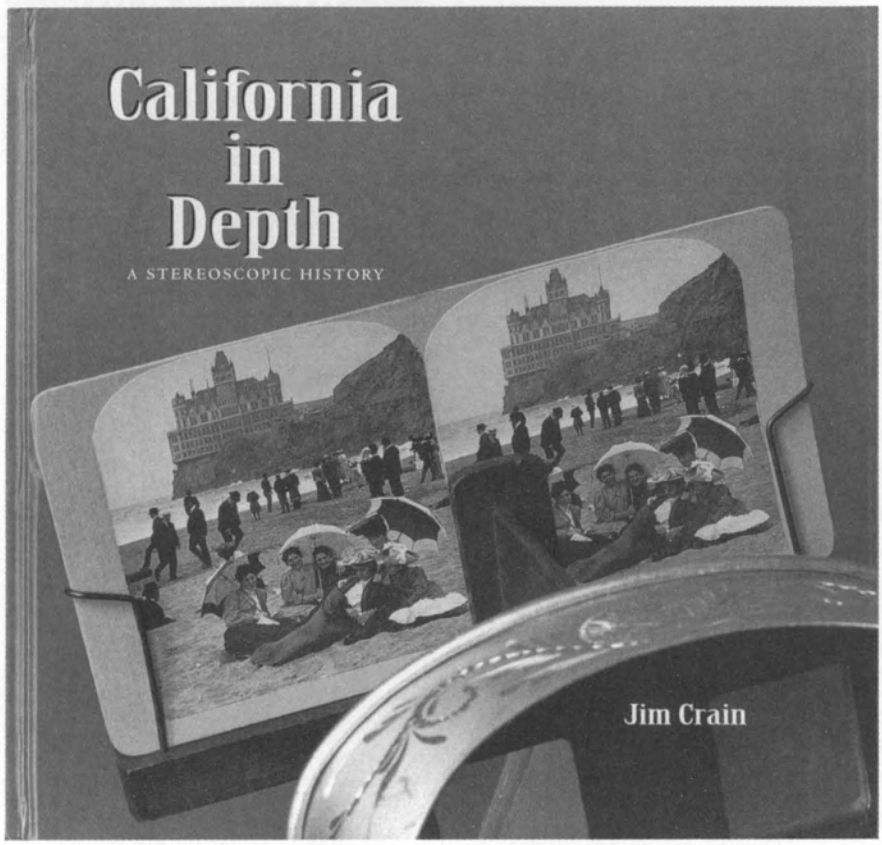
Our first unknown this time comes from Herb Milikien. It appears to be a celebration of some sort [or perhaps a hanging?] in a western town. There is a platform at the center, and at the right is the Berbig clothing store. The tower of a church or courthouse is at the top right.

Gary Brown submitted the shipwreck view which was taken somewhere on the New England coast. Does anyone recognize this wreck?

Douglas Hendrikson sent the other two unknowns. The first is on a yellow card and shows an imposing hotel, the Wilson House. Does anyone know the location? His second view is of a military group called the "30th Separate Co. E.O. Beers, Commanding" at "Camp Sullivan, Aug., 1879." Can anyone tell us where this camp was located?

Going crazy guessing the who, what or where of unidentified views in your collection? Get help from the entire NSA membership by sending views to The Unknowns, *5880 London Dr., Traverse City, MI 49684 with return postage. Even views with printed titles from major publishers can sometimes fail to identify some aspect of the subject. (Unusual subjects or interesting street scenes are more likely to be printed here than generic houses or pastures.) Send information on subjects you recognize to the same address.*





CALIFORNIA IN DEPTH A Stereoscopic History. Jim Crain, Chronicle Books 1994. Hardcover $24.95, 170 duotone photos, 112 pages, 10 x 10 inches, folding plastic viewer included. Available in many bookstores or call (800) 722-6657.

A Stereo El Dorado

Review by Ray Zone

Very few books are published which truly interest a general readership as well as the hardcore 3-D enthusiast. One such new book is *California in Depth, A Stereoscopic History* by NSA member Jim Crain. *California in Depth* is an invaluable photographic record of the history of the Golden State from about 1860 to 1900 and covers many diverse aspects of its development from geography and industry to urban studies. It also provides an interesting study in 3-D, showcasing the work of individual stereographers and reproducing almost every one of its photographic images in side-by-side stereo. A folding Taylor-Merchant "Stereopticon" viewer is included in a pouch on the inside back cover and the stereocards reproduced in the book are reduced to about five inches, slightly smaller than the seven inch scale of the actual cards. This reduction facilitates binocular "freeviewing" which is discussed, along with some handy hints for using the technique, on a separate page at the back of the book.

In an illuminating preface to *California in Depth*, Crain relates his first experience of 3-D discovery when he "had set out to find some historical illustrations of California for use in a book." The moment Crain looked through the stereoscope "was like stepping back in time and being swallowed by each tiny image as it suddenly filled my entire range of vision and became a window-sized view of the past... That first encounter with the stereoscope, with the fascination of looking history square in the eye, was nothing less than a magic carpet ride through nineteenth-century California." Crain subsequently became a die-hard collector of California stereoviews and amassed a collection of over three thousand individual views. He has selected the most pristine and historically significant images for *California in Depth* and the result is a pure pleasure for the stereo enthusiast as well as required reading for anyone with even a remote interest in California history. Crain's mutual interests in California and 3-D are perfectly conjoined with this book:

"California was the perfect setting for the practice of stereography. It was the end of the line and the ultimate goal in the progressive march across the country in search of new frontiers and new lives."

The first chapter in the book titled "The Photographers" provides an interesting and detailed picture of the hardships the stereographers endured with both recalcitrant, cumbersome materials and rugged terrain. Crain enumerates the stereo practitioners by name in this opening chapter so that as one reads through and views the images in the book one is made aware of the effort required from the individual behind the picture. In truth, each view represented a victory over nature and the limitations of the medium. That pioneer sense, both in the images themselves and the production behind the view, pervades this book.

After showcasing the stereographers themselves Crain takes us out on the pioneer "Trail to California" and the settling of the West with views of "Emigrants on the Move," "Indian Encounters" and "Passing the Landmarks." The book is very well organized in touching upon "Native Californians" and "Building the Pacific Railroad" as well as "The Daily Grind" and "After the Gold Rush." The Yosemite Valley, of course, is covered in a Jewel of a chapter which serves as a mini-history of its stereo documentation. Early views of San Francisco are well represented here in a separate chapter. "The Modoc War" is another mini-history in a chapter which includes many rare views of the conflict captured by Eadward Muybridge.

(Continued on page 39)

New 3-D IMAX "Mini" Camera

by Don Marren

To meet the needs and demands of the new age of 3-D filmmaking, and to keep IMAX technology at the forefront of the giant-screen film industry, the IMAX Corporation has developed a revolutionary new IMAX 3-D camera.

The single, lightweight, dual-filmstrip camera offers greater freedom to IMAX filmmakers, enabling them to capture shots difficult or impossible to achieve with the IMAX dual-camera rig, which has been used for IMAX 3-D and IMAX SOLIDO filming until now. The IMAX 3-D camera is so compact it can be used for underwater and Space Shuttle filming, and at other locations previously out of reach. There are fewer modules to assemble, allowing more set-ups per day, easier filming of dramatic performances and lower production and shipping costs. According to IMAX, the breakthrough features and design of the IMAX 3-D camera allow a filmmaker with no prior 3-D experience to set it up, turn it on and obtain flawless 3-D movies.

Patented in 1991, the camera is the culmination of four years of extensive research and development (*Stereo World* July/Aug. '92) combined with more than 20 years of experience designing and building cameras for the IMAX format.

IMAX 3-D camera features include:

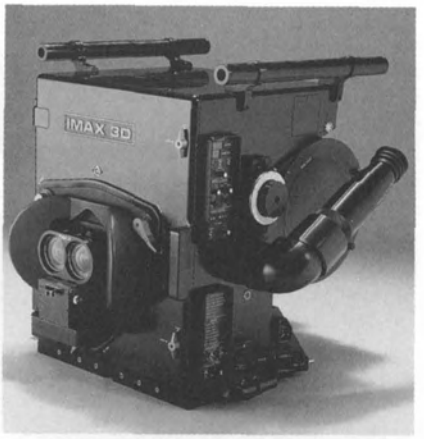
- Interchangeable 30mm, 40mm, 60mm and 80mm lens pairs. The unique 30mm fish-eye lenses, used for IMAX SOLIDO (the process using wireless sequential shuttering glasses and a hemispherical screen), gives this camera a wide-field-of-view capability not available with other 3-D systems.
- Four separate 1000' magazines that mount at the back, keeping the center of gravity constant during the 3-minute film run (larger 2500' magazines are also available).
- Crystal-controlled, variable frame rates, up to 48 fps for IMAX HD.
- Dual 15-perf 65mm movements.
- High-quality rackover optical viewfinder, plus parallax correcting video finder.
- Microprocessor motor controls with a display panel to give full read-out of camera's status.
- Servo-driven synchronous shutters, iris and focusing system.
- Dimensions: 26" high x 22" wide x 35" deep.
- Weight approximately 228 pounds with film, lenses and and four 1000' magazines. (The IMAX dual-camera rig weighs about 500 pounds and 1300 pounds with its small crane.)

Live-action IMAX can now be filmed in two ways. The first is with the IMAX dual-camera rig. It uses a half-silvered mirror and two separate cameras in a horizontal/vertical configuration, allowing interocular and convergence to be precision-set to produce a wide range of 3-D effects. The second way is with the new IMAX 3-D camera with its fixed interocular and convergence settings. In addition to shooting flat screen IMAX 3-D, it can film dome screen IMAX SOLIDO using a special 30mm wide-angle fish-eye lens pair designed by Huges Leitz Optical Technologies Ltd. Both the dual-camera rig and the new 3-D camera are fitted for tripod supports.

The IMAX 3-D camera is really two 15-perf IMAX camera movements in a single camera body with two 40-degree mirrors placed side by side reflecting the left and right images onto separate film strips. Each negative can be directly contact-printed onto 70mm film and flipped over for 3-D projection without the need for expensive, time-consuming optical printing. For easy servicing, most of the camera's electronics may be easily removed and replaced as a unit, or individual circuit boards may be swapped with spares to isolate specific problems.

Some of the new camera's other features include:

- Precise optical alignment with custom lens assemblies spaced 2.85

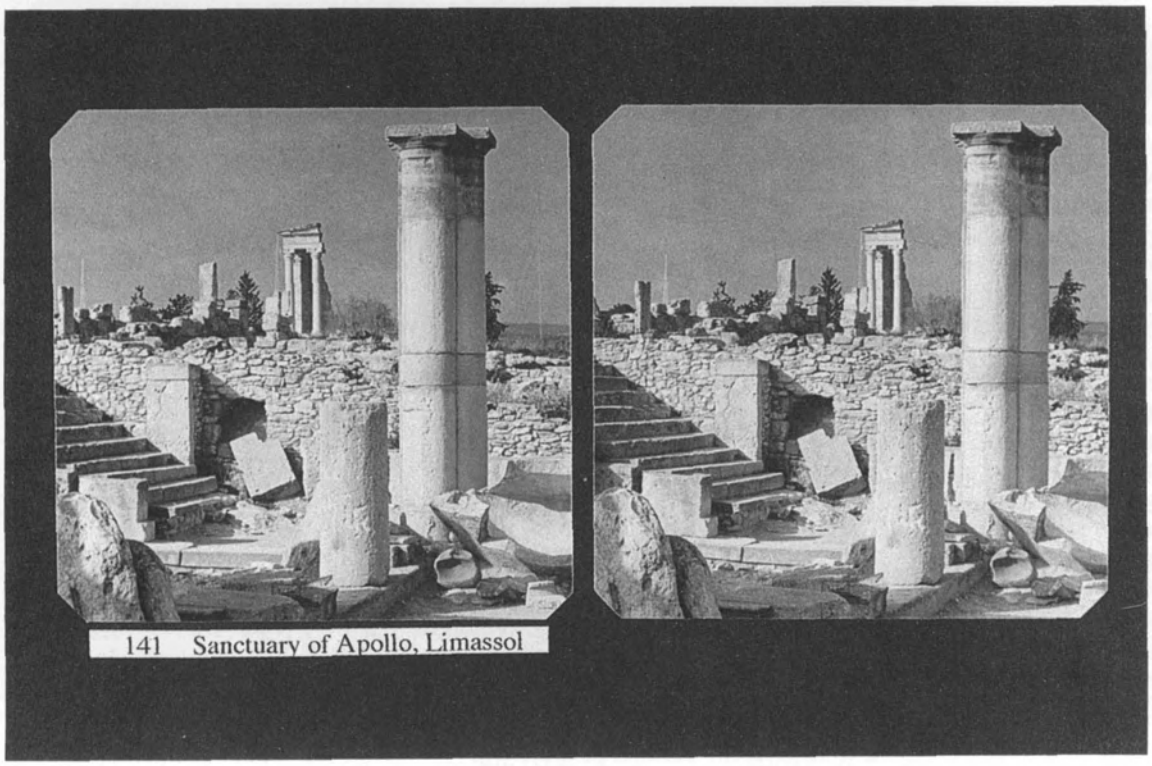


inches apart, about the same separation as human eyes.

- Lightweight conical shutters with low deflection that maintain critical clearances between lens, shutter and mirror.
- Both lenses and shutters are mounted on the camera's front door and are electronically synchronized by microprocessor controls, eliminating belts and gears.
- On-board micro-computers control about half of the 14 motors in the camera.
- Status and error LEDs indicate when the camera is ready to shoot or identify loading mistakes.
- Precise imaging mirrors fully reflect each view to the film. During shot set-up, these mirrors can be retracted for critical focusing with a high-quality optical viewfinder, allowing through-the-lens viewing of the subject, one eye at a time. (A black & white video viewfinder is mounted above the optical viewfinder and used during the shot.)
- The lens type mounted on the camera is recognized by the camera's software, which then selects the appropriate focus, iris and video overlay configuration.

The IMAX 3-D camera was first used to film some sequences in *Imagine 3-D*. This Expo '93 film has recently been re-edited and is available for distribution to IMAX 3-D theaters.

A special feature of the camera is the underwater housing accessory which makes filming at depths to 130' possible. It was put to extensive use in the new IMAX 3-D film *The Last Wilderness*, a spectacular exploration of our undersea world. The film is produced by Suntory Ltd., and will run at the Sapporo IMAX theater in Sapporo, Japan.



Cyprus in Stereo No. 141, "Sanctuary of Apollo, Limassol" by Andrew Archontides from one of his 3-D EXPERIENCE packets. © AG Archontides 1994.

Cyprus in Stereo

New publishing enterprises involving sets of stereoview prints are a rare event anywhere in the world. The latest such effort comes from an unexpected source—the Island of Cyprus. Andrew Archontides found stereography to be a virtually unknown art there, and in recent months has been creating packets of his views introducing the concept to both the local public and foreign visitors.

Each packet is boxed on a card titled "THE 3-D EXPERIENCE – Cyprus in Stereo" and includes 10 views, a plastic lorgnette viewer, and instructions on creating your own stereographs with a single camera or a matched pair of cameras. The views themselves are 4 x 6 inch color prints of rephotographed print pairs. This cuts costs, maintains the careful alignment of the original pairs, and allows the inclusion of the view number and title without extra printing or pasting.

While retaining sharpness, the copy prints do lose some color in their depiction of historic sites, street scenes, carnivals, etc. around the Island. Sets of larger format prints (over 3 inches wide each) from the original negatives mounted on card stock are also available, and can be viewed with the *Stereo World* lorgnette viewer. For available titles and U.S. ordering information, contact Andrew Archontides, PO Box 8213, Nicosia, Cyprus, Fax: 02-496912.

3-D CD-ROM Dinos

For those ready to go beyond The Nature Company's 3-D picture books (*SW* Vol. 21 No. 2, page 29), interactive computer software is now available featuring anaglyphic 3-D dinosaurs. *3-D Dinosaur Adventure* in CD-ROM MPC format is now on the shelves of Nature Company stores along with several flat CD-ROM educational software packages.

3-D Dinosaur Adventure includes a variety of different game situations offering different levels of challenge, but all seem to involve some sort of confrontation with dinosaurs made more realistic through anaglyphic 3-D graphics. The $59.95 package is from Knowledge Adventure Inc., 4502 Dyer St., La Crescenta, CA 91214, (818) 542-4200. For a Nature Company store near you, call (800) 227-1114.

The Changing State of SIS Art

by Martin Simon

Three new developments have pushed the state-of-the-art in single-image stereograms. First are hidden images in natural appearing photographs. An example in the book *Super Stereogram* shows an apparent photograph of a group camping beside a river. If you look in the trees above the tent, you see a hidden image. (*SW* Vol. 21 No. 2, page 18.) If you look in the river, you see another image. A second advance can also be seen in *Super Stereogram*. These are the extremely well crafted 2-D patterns such as rocks and nuts. The pattern looks photographic and no seams are visible where the pattern is repeated across the page.

A third and major advance is the integration of photorealistic elements from the 2-D pattern with the hidden 3-D image. An example can be seen in the inside cover of the book *Another Dimension* (21st Century Publications) The 2-D abstract pattern has pieces of tigers' faces which fall at exactly the right spot on the tigers in the hidden 3-D image. These pieces insert the right colors and add extra detail to the 3-D image, and they are *in stereo*! The little pieces are designed to be left and right views like little stereo pictures, so that when free-viewed, the full-color 3-D face falls right on the hidden-image 3-D tiger. The little stereoviews can be made photographically, in a 3-D modeling program, or by cut and shift techniques in a 2-D paint program. Here we see multiple 3-D techniques; wallpaper shifts, stereo pairs, and hidden image stereograms combined into a single integrated image.

Most of the latest high quality stereograms are being made from the center out, rather than right to left or left to right. The undisturbed pattern is placed in the center of the page and this minimizes and adds a kind of symmetry to the distortion of the 2-D surface image.

What is the best program to make stereograms? Many of the available public domain (free) and commercial stereogram programs are fine for experimenting with the techniques. (See *Create Stereograms on Your PC*, reviewed in this issue, for tips on choosing and combining SIS software.)

For high quality work, a program should:

1. Allow the user to select any horizontal and vertical resolution.
2. Allow the user to select any patch size and number of depth levels.
3. Allow the use of any patch or 2-D texture up to photographic quality 24-bit color images in place of random dots.
4. Allow either left-to-right or center construction. Central patches are a little tricky so the program must handle this in a graceful way. Gaps in the 2-D pattern must be filled appropriately.
5. Include a means to remove echoes. Large jumps in depth sometimes cause pieces of the 3-D image to repeat across the page or echo, which can be very distracting. Echoes are seen "out of the corner of your eye". When you look right at them, they often disappear. You can get rid of them by modifying the original artwork, or the program can be smart enough to detect and eliminate them.

It is unlikely you will find a program with *all* these features since some of the techniques are trade secrets which give some commercial makers an edge in the marketplace.

Aid Sought for Serious VR Research

According to a recent Associated Press item, the National Research Council is concerned about a large gap between expectations for virtual reality technology and current progress in the field. More direct interest and coordination from the government was urged. "With the limited technology that is currently available, there is a trade-off between realistic images and real-time interactivity," was the direct quote from Dr. Nathaniel Durlach of MIT, chairman of an NRC study.

Actual stereoscopic images are one of the key elements of realism often lost in the trade-off with more responsive interactivity, although this fact wasn't included in the AP coverage. The NRC found current entertainment oriented VR research lacking in the sophistication to fulfill its potential, mentioning that about 25 universities, 15 federal agencies and over 100 companies are in early stages of research, and are very unorganized.

One NRC example of a goal for VR interactive imaging involved surgery being performed via telerobot on a beating heart. The system would physically and visually compensate for the movements of the heart, presenting the surgeon with a steady, high resolution and presumably stereoscopic image with which to interact.

Sanyo's Lenticular Video

Lenticular 3-D video may at last be available on high end of the consumer market, at least in Japan. Sanyo has announced a 40-inch model selling for $50,000 and a 70-inch model selling for $98,000. While the system has been shown at trade shows and received good reviews, no plans now exist to export it. Besides the price, part of the reason may be the need for multiple cameras to provide the images that are electronically split into strips for separation by the lenticular lenses. Using very stable, high definition video images, Sanyo seems to have improved lenticular 3-D TV to something near the quality of lenticular prints or transparencies. But the large camera arrays required, along with special transmission requirements, may limit its uses even in Japan.

December 3-Dimensional Trade Show in Hamburg

A major trade show devoted to 3-D photography, holography, stereoscopic computer graphics, and virtual reality is scheduled for Hamburg, Germany December 2-4, 1994. Included will be exhibits of stereo cameras for both still and movie photography, stereo projectors, 3-D video equipment, View-Master material, and historic 3-D equipment.

Titled 3D–D-i-m-e-n-s-i-o-n-a-l-e, the show is co-sponsored by 3D-MAGAZIN which incorporates the journals of the German and Swiss Stereography clubs. Exhibits are anticipated from nearly every producer of 3-D equipment, software or images from Europe and beyond. While the closing date for exhibitors has passed, information

on attendance is available from Rainer Bode, Bode Verlag GmbH, Oeter Pütt 28, D-45721 Haltern, Germany. Phone 02364-16107, fax 02364-169273.

Assignment 3-D

(Continued from inside front cover)

Current Assignment: "Wheels"

This isn't limited to rustic wagon wheels being used as fences or the chrome hubcaps of overly customized hot rods. Anything that moves on, under or by wheels is fair game here, including cars, trains, unicycles, pretzel carts, skate boards, etc. Things like large pulleys or tiny watch parts would also be eligible, as would spherical rolling devices like ball bearings or the ball on the underside of a computer mouse. The wheels themselves would not have to be the center of interest in views of things like vehicles, but a close-up of just a windshield wiper on a 1938 Plymouth probably wouldn't be in the spirit of things. Deadline for entries in the "Wheels" assignment has been extended to March 7, 1995.

The Rules:

As space allows (and depending on the response) judges will select for publication in each issue at least two of the best views submitted by press time. Rather than tag images as first, second or third place winners, the idea will be to present as many good stereographs as possible from among those submitted.

Prizes are limited to the worldwide fame and glory resulting from the publication of your work. Anyone and any image in any print or slide format is eligible. (Keep in mind that images will be reproduced in black and white.) Include all relevant caption material and technical data as well as your name and address. Each entrant may submit up to 6 images per assignment.

Any stereographer, amateur or professional, is eligible. Stereos which have won Stereoscopic Society or PSA competitions are equally eligible, but please try to send views made within the past eight years. All views will be returned within 6 to 12 weeks, but *Stereo World* and the NSA assume no responsibility for the safety of photographs. Please include return postage with entries. Submission of an image constitutes permission for its one-use reproduction in *Stereo World*. All other rights are retained by the photographer.

Send all entries directly to: ASSIGNMENT 3-D, 5610 SE 71st, Portland, OR 97206.

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Stereo El Dorado

(Continued from page 34)

Throughout the book the stereoviews are printed in a lustrous 2-color duotone process giving the images a sepia tint—a perfect choice of color for the subject matter. Famous California personalities of the era are covered in a closing chapter with scarce images of John Sutter, Mark Twain, Bret Harte, and artist Alfred Bierstadt. Teddy Roosevelt and John Muir are shown standing together on Glacier Point in Yosemite in 1903. This famous image, which has been reproduced flat many times, is presented for the first time here in stereo.

The only book which comes remotely close to *California in Depth* is Peter E. Palmquist's *Lawrence & Houseworth/Thomas Houseworth & Co. A Unique View of the West 1860-1886* (National Stereoscopic Association, 1980). Palmquist served as an advisor to Crain for *California in Depth*, is cited in the acknowledgements, and must be highly gratified to see Crain's book. To a great extent *California in Depth* is an outgrowth of the work Palmquist has been doing for many years in documenting the work of California stereographers.

Chronicle Books has published the book at the reasonable price of $24.95 with sturdy 100# gloss text paper. The boards are paper-wrapped but the edition will withstand many years of use. (Cloth-wrapped boards would have raised the retail price at least $10.00.) One can only hope that this fine work reaches the general readership for which it is intended. Those who discover it will be well rewarded with the gold to be found in its pages.

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Classified

For Sale

3-D HOLLYWOOD with 67 3-D photographs by Harold Lloyd. $35 list. Buy several at this 1/2 price of $17.50 including shipping. Pictures of Monroe, Hope, Cooper, Mansfield, Burton. Charles Weiss, 637 Ambler, Tallmadge, OH 44278, (216) 633-4342.

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ARTHUR GIRLING'S "Stereo Drawing - A Theory of 3-D Vision and Its Application to Stereo Drawing". 100 pages hardbound 8½ x 12. Stereo photographers are finding that the book applies equally to stereo photography and is a mine of information on methods of making 3-D pictures and viewing them. Written in non-technical language and profusely illustrated with B&W drawings as well as 11 pages of superb anaglyphs, this book is a must for the serious stereoscopist. Now available from NSA Book Service, 4201 Nagle Rd., Bryan, TX 77801. Price (including postage) $19.00 USA, Canada. Overseas add $2.00 surface, $4.00 air.

BELL & HOWELL Stereo Vivid manual slide projector - Model 116. Built to accept American standard slides 1/5/8" x 4". Unit enclosed in sturdy case with handle. Price $125. Shipping weight 30 pounds - UPS charge $20. Also Silver Pacer screen, 50" x 50" for $40 - UPS charge $10. Both in excellent condition. George J. Taylor, PO Box 672, Green Valley, AZ 85622.

BOOK, *The Siege at Port Arthur,* hardback with 3-D viewer, greatly reduced at $10 incl. seamail. Add $4 for airmail. Ron Blum, 2 Hussey Ave., Oaklands Park SA 5046, Australia. See reviews, SW, Nov. '87.

CAMERAS, mounts, filters, accessories. SASE for list, Harry Richards, 11506 N. Laguna Dr., Mequon, WI 53092, (414) 242-0649.

As part of their membership, NSA members are offered free use of classified advertising. Members may use 100 words per year, divided into three ads with a maximum of 35 words per ad. Additional words and additional ads may be inserted at the rate of 20¢ per word. Please include payments with ads. We cannot provide billings. Deadline is the first day of the month preceding publication date. Send ads to the National Stereoscopic Association, P.O. Box 14801, Columbus, OH 43214, or call (419) 927, 2930. A rate sheet for display ads is available upon request. (Please send SASE.)

For Sale

CENTERFOLD STARS now in Realist 3-D slide sets. Shot on the set of a mens magazine shoot. Beautiful full color, high quality, 8 slides only $20. (add $5 for viewer). Free newsletter.,IPA, 100-E Highway 34 - Ste 115, Matawan, NJ 07747.

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FEW LEFT! The "Just View It!" T-shirt. A 100% cotton gray T-shirt showing a reel & Model C. Sizes M, L $15/shirt (shipping $3), Chris Pitzer, 2033 W. Grace St., Richmond, VA 23220.

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GET A COPY of the "1994 Old Settler's Gazette" with cross-eye 3-D views of central Missouri including a beautiful hillbilly girl on Route 66. A limited supply of 1993 copies are also available. Send $5 for each issue (postage paid) to: Van Beydler, Box 827, St. Robert, MO 65583-0827.

IVES KROMSCOP, removable hood has been repaired, otherwise excellent condition. Viewer is actual one pictured in SW Vol. 15 #1 March/April '88. Price $1400 plus shipping. Paul Wing, (617) 749-1996.

For Sale

JOHN WALDSMITH'S "Stereo Views, An Illustrated History and Price Guide" available signed from the author, $22.95 softbound, add $2.95 postage and handling. Please note: the hardbound edition is sold out. MasterCard, VISA and Discover accepted. John Waldsmith, PO Box 191, Sycamore, OH 44882.

KING INN 2¼ x 2¼ viewers and matching mounts. In leather-trimmed carrying case, $165. postpaid. Boxed, $125. postpaid. Mounts $55./100 pp. Q-VU, 817 East 8th, Holtville, CA 92250.

NEW BOOK! *STEREOVIEWS ILLUSTRATED Volume 1: Fifty Early American*; full stereo, full size, KILLER QUALITY duotones, 3-page price guide. See review, *Stereo World* V21 #2, page 17. $20 postpaid (worldwide) by Russell Norton, PO Box 1070, New Haven, CT 06504-1070.

OFFICIAL 20TH ANNIVERSARY NSA-*Stereo World* View-Master Reel. Seven scenes from *Stereo World* 20th anniversary issue, duplicated in a limited edition View-Master reel with descriptive folder. $1.90 plus 50¢ S&H. Charley Van Pelt, 1424 E. Mtn. St., Glendale, CA 91207, phone/fax (818) 243-5636.

Q-VU PRINT MOUNTS simplify mounting stereo views. Sample kit $5, includes mounted view. Black or gray $38/100 ppd. Also, King Inn 2¼ x 2¼ viewers & mounts. Q-VU, 817 East 8th, Holtville, CA 92250.

RARE VIEW-MASTER items for sale/trade - Unique items include Movie Preview Reels, Advertising Reels and Military Training reels. Send SASE for list to: Wolfgang Sell, 3752 Broadview Drive, Cincinnati, OH 45208.

REALIST f2.8, good condition except sticky, erratic film advance, $150.R.A. Buchroeder, 8 S. Bella Vista Dr., Tucson, AZ 85745.

REVERE STEREO CAMERA, Arrow-viewer, View-Master Mark II camera and cutter; VM single reels, packets, accessories; books and miscellaneous. Send long SASE for Auction List #3. Steven Perand, 1601 Mallard Lane, Virginia Beach, VA 23455, (804) 464-2842.

RUBBER STAMPS in actual stereo 3-D! Various cameras, fun illustrations & now personalized stamps offered! (Also 2-D stamps). SASE to: Stereo Stamp Co., PO Box 555, Ansonia Station, New York, NY 10023.

STARTER SETS, Assortments of 25 Keystone stereo views, Mint, All different, $20 per set, plus $3.50 shipping. Anthony Winston, 344 Jackson Ave., Morgantown, WV 26505.

STEREO PROJECTORS - TDC 116, TDC 716, COMPCO 500, all exc. - call! Bonum film cutters, $19. DFT 1000W bulbs, $15. Pairs of 6x6 slide viewers for 6x13, $32. Kodak EKTALITE super-bright rigid curved flat silver screens - call! Also cameras, lens attachments, Nude slides from artistic to ???, lots more - call David, (617) 254-1565, evenings (Boston).

For Sale

STEREO SALE, Usable Realists 3.5 starting $99 up to $180. - call. Realist flash - $23., 2.8 Realist with Ektar E+ - $650., TDC Colorist II E++ with case $325.,Stereo Hit with case E+ scarce - $350., Airequipt trays - $25 each, TDC Selectrays - $25 each, View-Master flash - Mint IB boxed - $40., Wollensak Flash - $30., Revere Flash - $25., View-Master Model A box - $35., Model B box $35., Tru-Vue Strips - $3. & up - call for list, Keystone lighted pedestal Viewer - $95., TDC 116 Mint in box 4" lens - $395., TDC 716 with case E+++ - $475., View-Master Advertising Globe, RARE - $450., Realist Manual - Tydings $35., Lipton's Stereo Cinema - $20., Series 5 matched filters, mounting supplies, boxed stereo views, View-Master reels - call. Call for miscellaneous wants - stock always changing...Stuart - phone or fax (980) 303-1883.

STEREO SLIDE STORAGE BOX! Eliminate those shoeboxes! 4x8x2 corrugated cardboard box holds approximately 130 cardboard or 60 glass mounted slides. $2 each, plus $1 shipping per order. TKE, PO Box 6455, Delray, FL 33484-6455.

STEREO VIEW CARDS, private collection - many subjects. D. Hendrickson, 2650 West 223rd St., Bucyrus, KS 66013, (913) 964-3360.

STEREOSCOPIC VIDEO multiplexer and viewer. Shoot 3-D video with two sync'd cameras, record and view with ordinary VCR and TV. With two paired liquid crystal glasses, $500. Call for more information. D.A. Hunter, (407) 439-6104.

TAKE 3-D PHOTOGRAPHS, for free viewing or in standard viewers, with any single lens camera, single exposure, no attachments, novel method, complete instructions, send $10. Stier, 7901 Travelers Tree Drive, Boca Raton, FL 33433.

THE 2-D BOOK, THE SECRET GARDEN - 100 FLORAL RADIOGRAPHS is available from ALMAR Company, PO Box 15174, Ann Arbor, MI 48104. Price: $40 + $5 S&H. Ideal gift for flower lovers. 3-D slides and cards of floral radiographs are also available. Send for catalog.

TUNE-MASTER promo CD in folding package, looks like VM viewer & reel (see *SW*, Vol 18, No.4). Missing outer sleeve, slight crease in real-change lever, otherwise Exc.+, $55; View-Lite Illuminator for model C viewer, (not made by VM), mint– in original box, $25; Realist ST-24 Film Cutter, Exc.+, $35; ST-58 Flash Shield, Exc.+ in original box, $12.50; ST-61 Viewer, Exc.+, $75; Same, with ST-70 DC adapter, $100; ST-220 metal mask mounting jig, Exc.+ in original box, $22; Replacement cord for Realist 81 stereo projector with rare miniature twist-lock connector, $30; Stereo-tach split-frame viewer in original storage case with hinged lid & room for slides, all Mint– in original box w/papers, $45. Mark Willke, 200 SW 89th Ave., Portland, OR 97225. (503) 297-7653. Please add UPS.

VIEW-MASTER *Stereoscopic Atlas of Human Anatomy, Head and Neck Section*, five volumes, complete - (See *Stereo World*, May/June 1993 p. 4-10 for details.) $450. in perfect condition. 2335 Benton Street, Santa Clara, CA 95050-4432, (408) 246-1383 (H), 236-4265 (W).

VIEW-MASTER WITH SOUND. Amazing difference, send stamped SASE for information. Walter Sigg, 3-D Entertainment, Box 208, Swartswood, NJ 07877.

For Sale

WILD Heerbrug 1950s military 1.5 meter stereo rangefinder, tripod, case, $500 + shipping. R.A. Buchroeder, 8 S. Bella Vista Dr., Tucson, AZ 85745.

YOUR TOWN, your state historical stereo photos, photographs, real photo post cards, documents, medals, engravings and memorabilia. MacDonalds' Historical Collection, 1316 NE 113th Ave., Portland, OR 97220-2214.

Trade

BARNUM, and 1500 other selected stereo views in stock. Will trade only for Main flat mount views - any subject or condition. Write or call for details; Blaine E. Bryant, 864 Bridgeton Road, Westbrook. ME 04092, (207) 854-4470.

REALIST SLIDES for sale or trade - including Cecil B. DeMille movies, 300+ slides of Occupied Japan, 1955 Hawaiian Airlines advertising set, movie stars, stereoview reproductions and more. Send SASE for list. Chris Perry, 306 Logenita Drive, Palm Springs, CA 92264, (619) 325-4530.

THE REALIST NEWS - Vol.1 No. 1 (Jan.1951), couple stains at top, otherwise Exc.+; Vol. 1 No. 2 (March 1951), Exc.+; Vol. IV (March 1954), Exc.+. I will trade these issues for ones that I need (Exc.+ condition or better). Please let me know which issues you have available. Mark Willke, 200 SW 89th Ave., Portland, OR 97225. (503) 297-7653.

UNIQUE, glassed, multi-exposure night scenes of '64 NY Fair - to trade for other original slides of interest. L. Smart, 1809 Brickhouse LN., Fallston, MD 21047, (410) 877-3592.

WOLLENSAK 10 CAMERA and viewers wanted. Have over 5000 stereoviews to trade. Manfred Schmidt, 6544 N. Oak Park, Chicago, IL 60631, (312) 631-5949, Fax (312) 631-2173.

Wanted

3-D MOVIES WANTED: Eye of the Dragon, Dynasty, The Maze, Fort Ti, Paradiso, Jivaro, Miss Sadie Thompson and The Nebrasksn. John Sugg, 637 Boyd, Pontiac, MI 48342, (810) 373-2725.

ALASKA, Klondike stereos especially Muybridge, Maynard, Brodeck, Haynes, Continent. L. Hense, Masterson of Pennsylvania, New York. Also buying any old Alaska photographs, books, post cards, ephemera, souvenirs, etc. Wood, Box 22165, Juneau, AK 99802, ph/fax, (907) 789-8450.

ALASKA-KLONDIKE-YUKON-ESKIMO-ARCTIC stereoviews wanted, also will trade these. Additionally want Washington State, Idaho, Oregon stereoviews. Please write. Thanks, Robert King, 3800 Coventry Dr., Anchorage, AK 99507.

ANY 3-Ds OF THE DOORS/Jim Morrison are desperately wanted by their largest fan club. Please help! Top prices paid! Kerry, 27 S. Sage Dr., Orem, UT 84058 or (801) 224-224-7390.

BLACK HILLS VIEWS. I have moved to the beautiful Black Hills and will eagerly buy or trade for local photos and books. Please help me build a great collection! Brian Bade, 13702 Mountain Beaver Way, Rapid City, SD 57702-6563, (605) 342-6087.

Wanted

BOOK - Egypt, A Journey Through the Land of the Pharaohs, via 100 Stereo Views. C. Simms, (619) 757-7116.

BUYING Italian made Stereo-Rama reels, viewers, catalogs. Also want Techno Film-Milan and Stori-View items. Describe and price. Joanne Kessler, PO Box 160533, Miami, FL 33116-0533.

C. GOODRICH, Plainfield, Vermont - Stereo views. Any condition, for research. Contact Richard Petit, RR 1, Box 1770, Plainfiels, VT 05667, (802) 454-7897.

CAPE MAY, NJ photos (esp. stereos), all formats considered (including real photo post cards). Also, any US outdoor CDVs (1860-70 + exc. cond. only). Richard Rydell, PO Box 132, Thomaston, ME 04861, (207) 372-8523.

CENTRAL PARK - anything photographic: stereo views, cabinets, CDVs, etc. 1850-1930. Herbert Mitchell, 601 W. 113th St.,Apt. 8-H, New York, NY 10025-9712, (212) 932-8667.

COLLECT, TRADE, BUY & SELL: 19th Century images (cased, stereo, Cdv, cabinet & large paper) Bill Lee, 8658 Galdiator Way, Sandy, UT 84094. Specialties: Western, Locomotives, Photographers, Indians, Mining, J. Carbutt, Expeditions, Ships, Utah and occupational

COLORADO: Collect, buy, sell & trade 19th Century images - stereos, cabinets, tintypes, cdv, large photographs, real photo post cards, glass negatives, albums, books with real photographs. Specialties: Locomotives, trains, towns, street scenes & occupational. David S. Digerness, 4953 Perry St., Denver, CO 80212-2360.

COLORADO MINING TOWNS and railroads - all photographers - stereos, cabinets, CDVs, large paper, glass negatives, albums, books illustrated with real photographs. David S. Digerness, 4953 Perry St., Denver, CO 80212-2360, (303) 455-3946. Specialties: Locomotives, street scenes, survey teams, expeditions, stage coaches, freight wagons and occupational.

CRAWFORD, J.G. or Crawford and Paxton, Crawford Bros., Crawford and Littler. Looking for photos of any kind and information for biography of this Oregon photographer. Eric P. Gustafson, 1795 W. 17th, Eugene, OR 97402.

FLAT MOUNT VIEWS of Russia, especially those by Russian photographers; will buy or trade. Also want to correspond with anyone interested in such material with a view to an article on it. T.K. Treadwell, 4201 Nagle Rd., Bryan, TX 77801.

FLORIDA STEREOS of historical value, especially Tallahassee, Tampa and Gainsville: Price and describe or send on approval; highest prices paid for pre-1890 views. No St. Augustine. Hendrickson, PO Box 21153, Kennedy Space Center, FL 32815.

GOLF stereo views, Corte-Scope views, Tru-Views, sets or individual cards, any old golf films or ephemera. George Lewis, PO Box 291, Mamaroneck, NY 10543, (914) 698-4579. all letters answered.

Wanted

GRAND DUKE ALEXIS of Russia. Anything related to tour of U.S., 1871-72. Stereo views, portraits, ephemera. Copies of your keepers would also be appreciated for research. Jim Crain, 131 Bennington, San Francisco, CA 94110.

HARDHAT DIVERS WANTED! Stereoviews, Cdvs, Albumen prints, Cabinet cards, photographs, daguerreotypes, ambrotypes, tintypes, RP post cards, etc. Also early underwater photographs. Gary Pilecki, 617 Guaymas Court, San Ramon, CA 94583, (510) 866-0848.

I BUY ARIZONA PHOTOGRAPHS! Stereoviews, cabinet cards, mounted photographs, RP post cards, albums and photographs taken before 1920. Also interested in Xeroxes of Arizona stereographs and photos for research. Will pay postage and copy costs. Jeremy Rowe, 2331 E. Del Rio Dr., Tempe, AZ 85282.

I COLLECT VIEWS OF SAN DIEGO, California in Realist or View-Master format! Contact Dave Weiner, PO Box 12193, La Jolla, CA 92039.

IMAGES in all formats by South Carolina artists Wearn & Hix, Sam Cooley, Hass & Peale, H.C. Foster. Robert W. Buff, Jr., 33 Palatine Rd., Columbia, SC 29209.

IMAGES of Synagogues and Jewish Temples of Europe and USA. Sal Kluger, 11 Imbrook, Aberdeen, NJ 07747.

INDIANA. Stereoviews of Lake Maxinkuckee, Culver, IN by Frank M. Lacey, Photographer, Vance Block, Indianapolis. 9 views published of camps, club houses, etc., c. 1890s. Also 8 x 10 views. John Cleveland, 1054 East Shore Dr., Culver, IN 46511, (219) 842-3169.

JOHN H. FOUCH - Top prices paid for any photograph by John Fouch. James Brust, 1907 Rapallo Place, San Pedro, CA 90732, (310) 833-7477 or (310) 832-7943.

LANSING, MI stereoviews, photos, post cards, advertising, etc. Anything from Lansing. David R. Caterino, 9879 Bismark Hwy., Vermontville, MI 49096.

LIGHTHOUSES, LIFESAVING SERVICE, rescues using breeches buoy, etc. Stereos, photos, cabinets, books, any related materials. James W. Clafin, 30 Hudson St., Northborough, MA 01532.

LYNN SKEELS, Ravenna, Ohio, views of Airships USS AKRON & USS MACON. On grey mounts, similar to Keystones. Also want photos (any format) or ephemera of Canton Bulldogs, Akron Pros or Cleveland Panthers professional football teams. John Waldsmith, 302 Granger Rd., Medina, OH 44256.

MUYBRIDGE VIEWS - Top prices paid. Also Michigan and Mining - the 3 Ms. Many views available for trade. Leonard Walle. 47530 Edinborough Lane, Novi, MI 48374.

NEW YORK CANAL and related views. Erie, New York Barge, Genesee, Champlain, Black River, Chemung, Delaware and Hudson, and Black River canals, and other U.S. canals. Carl Wampole, PO box 245, Nesconset, NY 11767, (516) 724-4311 call eves.

Wanted

NEWBURYPORT, MASS. stereoviews by Meinerth, Moseley, MacIntosh, Redd and others. Buy or trade. Scott Nason, 12 Marlboro St., Newburyport, MA 01950, (508) 462-2953.

OLD U.S. MINT, U.S. Treasury stereo views! Highest prices paid for stereo views I need of U.S. Mint, coining operations, paper money engraving & printing operations, U.S. Mint interiors, exteriors from Philadelphia, San Francisco, New Orleans, Denver, Carson City, NV, Dahlonega, GA, Charlotte, NC, mints, plus U.S. Treasury & Bureau of Engraving & Printing operations, Washington, DC. Please mail or FAX photocopy, with price and condition noted. I'll reply within 48 hours. Attn Dave Sundman, c/o Littleton Coin Co., 253 Union St., Littleton, NH FAX 603-444-2101, (est. 1945).

PERMANENT WANT: Stereo views of Boulder, CO and vicinity. Also misc. views by Boulder Stereographers. Alan Ostlund, 479 Arapahoe Ave., Boulder, CO 80302, (303) 444-0645.

PETOSKEY, Harbor Springs, Beaver Island or any Northern Michigan views. Howard J. Ball, 441 N. Division Rd., Petoskey, MI 49770, (616) 347-2700.

PITTSBURGH, PA or Alleghent City flat mount stereo views wanted. Also looking for Realist format stereo slides of Pittsburgh from the 50s or 60. John Stuart, 115 Laural Ct., Pittsburgh, PA 15202.

REALIST 1525 Accessory Lens Kit for Macro Stereo Camera.; Realist 2066 Gold Button Viewer; Realist 6-drawer stereo slide cabinet in Exc.+ or better condition (with Realist logo); Baja 8-Drawer stereo slide cabinet with plastic drawers marked "Versafile". Mark Willke, 200 SW 89th Ave., Portland, OR 97225. (503) 297-7653.

SINGLE VIEWS, or complete sets of "Longfellow's Wayside Inn" done by D. C. Osborn, Artist, Assabet, Mass., Lawrence M. Rochette, 169 Woodland Drive, Marlborough, MA 01752.

SKATEBOARDING pictures or slides, any format, from 1960s and 1970s. Others considered. Also collect Skateboard magazines and 16mm films from 60s and 70s. Will pay fair price. Let me know what you have. L. Tanner, Box 101, Port Neches, TX 77651.

SLIDE HOLDER/BAR to fit Underwood & Underwood antique stereoscope hand-held viewer. Also desire views of Minnesota. J.R. Garzon, 7323 Lesley Ave., Indianapolis, IN 46250.

STEREO CARDS (views) from Wisconsin, cities of Milwaukee, Waukesha, Templeton, Pewaukee, Oconomowoc, Watertown, Hartland, Sussex. Send Xeroxes to Rick Tyler, 115 W. Newhall Ave., Waukesha, WI 53186 or phone (414) 549-0478.

STEREO CARD VIEWS of Utica, New York. Ron Pytko, 135 Sedgwick Rd., Syracuse, NY 13203, (315) 423-7989.

STEREO DAGUERREOTYPES; all kinds, all nations & subjects. Any condition. Ken Appollo, PO Box 241, Rhinecliff, NY 12574, (914) 876-5232.

Wanted

STEREO VIEWS, cabinet cards, mounted photos, etc. of Colorado and New Mexico taken by D.B. Chase. Also interested in Xeroxes of the above for research. Mark Gardner, Box 879, Cascade, CO 80809.

STEREO VIEWS of the Navy airship USS Shenandoah including transcontinental 1924 flight and 1925 crash. Excluding Keystone view #17402. Kent Bedford, 1025 49th St. NW, Canton, OH 44709.

THIRD REICH PROPAGANDA Post Cards, other military post cards, reasonably priced. Approvals and catalogs welcome. Also scenic View-Master reels, anything 3-D. Nazi Collectables. Dennis Vance, 112 Sloop Arthur Dr., Concord, NC 28025.

TOP PRICES PAID for stereo view collections, write: Dr. Leonard Griff, 210 W. Rittenhouse Sq., Box 2503, Philadelphia, PA 19103.

TOSHIBA 3-D Camcorders, also 35mm prints of 3-D movies. Michael Starks, 3DTV Corp., PO Box Q, San Rafael, CA 94913-4316, (415) 479-3516, fax 3316.

ULYSES S. GRANT - Researching all known photographs for publication. Copies from your collection appreciated. I also purchase Grant images, any format. Jim Bultema, 1634 El Verano, Thousand Oaks, CA 91362, (805) 497-6047.

VIEW-MASTER WANTED - Reels & Packets. If you are not an active collector or have concern about what will happen to your View-Master treasures in the future, your collection will have a good home with me. Kyle Spain, 620 Brightside Lane, Pasadena, CA 91107, (818) 449-9179.

VIEWS OF GLASSMAKING INDUSTRY, Glass Exhibitions, Glass Blowing, etc. Send info and price to Jay Doros, 780 Chancellor Ave., Irvington, NJ 07111.

WHALES, WHALING OR BOSTON HARBOR stereo views, including views of dolphins or the harbor islands. Send photocopies of front & back to: P. Barresi, PO Box 381771, Cambridge, MA 02238.

WILD WEST WANTED! Buffalo Bill, Annie Oakley, Indians, Cowboys, outlaws, lawmen. Wild West Show performers. Western town views. Stereos, cabinets, CDVs, large photos. Please send xerox copy and price, serious buyer. Art Sowin, 8436 Samra Dr., West Hills, CA 91304, (818) 346-2171.

WILL TRADE up to $145. in reels (Waldsmith values) for View-Master Personal 24" or 36" Close-Up lenses. Send your wants plus SASE for my VM/Tru-Vue list including some not listed in Waldsmith. Van Beydler, Box 827, St. Robert, MO 65583-0827.

YELLOWSTONE N.P. by Stereo Travel Co., Numbers 1 through 4, 9, 17 & 18, 28, 33 & 34, 38 & 39, 50 & 51, 57, 70 thru 75, 87 & 89. John Johanek, 4750 Rolling Hills Drive., Bozeman, MT 59715.

A LISTING OF COMING EVENTS

Calendar

November 27 (NY)
American Photographic Historical Society Fall Photographic Fair, New York Hilton (Rhinelander Gallery), Avenue of the Americas between 53rd and 54th. Call (718) 386-9627.

December 3 (Germany)
3D—D-i-m-e-n-s-i-o-n-a-l-e, a major trade show devoted to 3-D photography, holography, stereoscopic computer graphics, and virtual reality, Hamburg, Germany. Co-sponsored by 3D-MAGAZIN. Contact Rainer Bode, Bode Verlag GmbH, Oeter Pütt 28, D-45721 Haltern, Germany. Phone 02364-16107, fax 02364-169273.

December 3 (CA)
Oxnard Camera Show and Sale, Oxnard Community Center, 800 Hobson Way, Oxnard, CA. Contact Anton at Bargain Camera Shows, PO Box 5352, Santa Monica, CA 90409, (310) 578-7446.

December 4 (CA)
Hayward Camera Show & Sale, Centennial Hall, 22292 Foothill Blvd., Hayward, CA. Contact Carney & Co., 231 Market PLace #379, San Ramon, CA 94583, (510) 828-1797.

December 4 (CA)
Burbank Camera Show & Sale, Aeronautical District Lodge, 2600 Victory Blvd., Burbank, CA. Contact Anton at Bargain Camera Shows, PO Box 5352, Santa Monica, CA 90409, (310) 578-7446.

December 4 (MI)
30th Detroit Photorama USA, Dearborn Civic Center, Dearborn, MI. Contact Photorama USA, 20219 Mack Ave., Grosse Pointe Woods, MI 48236, (313) 884-2243.

December 4 (VA)
Barone Camera Swap Meet, Holiday Inn Crystal City, 1489 Jeff Davis Hwy, Arlington, VA. Contact Barone & Co., PO Box 18043, Oxon Hill, MD 20745, (703) 768-2231.

December 10 (PA)
Philadelphia-Fort Washington Show & Sale, Holiday Inn-Fort Washington, 432 Pennsylvania Ave., Fort Washington, PA. Contact Photorama USA, 20219 Mack Ave., Grosse Pointe Woods, MI 48236, (313) 884-2243.

Upcoming National NSA Conventions

1995
Atlanta, GA June 27 - July 3

1996
Rochester, NY August 1-5

1997
Bellevue, WA July 4-6

December 11 (CA)
Buena PArk Camera Expo, Sequoia Club, 7530 Orangethorpe Ave., Buena PArk, CA. Call (714) 786-6644 or 786-8183.

December 11 (D.C.)
Washington, D.C. Camera Show & Sale, Holiday Inn-College Park, 10000 Baltimore Blvd., College Park, MD. Contact Photorama USA, 20219 Mack Ave., Grosse Pointe Woods, MI 48236, (313) 884-2243.

December 11 (NJ)
Second Sunday Camera Show, Firemans Hall, Parish Dr., Wayne, NJ. Contact Second Sunday Camera Show, 25 Leary Ave., Bloomingdale, NJ 07403, (201) 838-4301.

December 17 (WI)
Super Madison Show & Sale, Howard Johnson Hotel, 4822 E Washington, Madison, WI. Contact Mark Orenstein, 2921 W Diversey, Chicago, IL 60647, (312) 486-1411.

December 18 (IL)
Chicago Fantastic Camera Show, Westin Hotel O'Hare 6100 River Rd., Rosemont, IL. Contact Photorama USA, 20219 Mack Ave., Grosse Pointe Woods, MI 48236, (313) 884-2242.

December 18 (NY)
New York City Camera Show, Embassy Ballrooms at Inn on 57th St., 440 W 57th St., New York, NY. Contact New York City Camera Show, 25 Leary Ave., Bloomingdale, NJ 07403, (201) 838-4301.

January 7 (FL)
3rd Sarasota Photorama USA Camera Show & Sale, Ramada Inn-Airport, 8440 N Tamiami Trail, Sarasota, FL.

January 7 (FL)
Camera Exchange Show & Sale, Quality Inn, I-4 and State Rd. 44, DeLand, FL. Contact Florida Camera Shows, (904) 738-0549.

January 8 (FL)
4th Tampa, FL Camera Show, Holiday Inn-Ashley Plaza Downtown, 111 Weas Fortune St., Tampa, FL. Call (813) 223-1351.

January 8 (NJ)
Second Sunday Camera Show (see December 11).

January 14-(CA)
19th Annual Photo Fair, Santa Clara Co. Fairgrounds, 344 Tully Rd., San Jose, CA. Contact Photo Fair, PO Box 32923, San Jose, CA 95152, (408) 251-9197, Fax 251-9197.

January 21 (FL)
8th Gainsville Camera Show & Sale, Holiday Inn-West, 7417 NW 8th, Gainsville, FL. Call (904) 332-7500.

January 21 (HI)
Hawaiian Camera Supply, Honolulu, HI-Ilikai Hotel, 1777 Ala Moana Blvd., Honolulu, Hawaii. Contact Don Slocum, PO Box 3318, Kailua-Kona, HI 96745, (808) 326-7355.

January 22 (CA)
Santa Barbara Camera Show & Sale, Earl Warren Showgrounds, Santa Barbara, CA. Contact Bill Bagnall (714) 786-8183 or 786-6644.

January 22 (CA)
Hayward Camera Show & Sale (see December 4).

January 22 (FL)
9th Jacksonville Camera Show & Sale, Holiday Inn, 9150 Baymeadows Rd., Jacksonville, FL. Call (904) 737-1700.

January 28-29 (FL)
Orlando Camera Show, Holiday Inn-Orlando Arena, 304 W Colonial Dr., Orlando, FL.

January 29 (CA)
Buena Park Camera Expo (see December 11).

January 29 (NY)
New York City Camera Show (see December 18).

February 4-5 (FL)
Florida West Coast Camera Show & Sale, Minnreg Building, 6340 126 Ave. N., Largo, FL.

February 11-12 (FL)
Florida Photo Collectors 19th Annual Major Regional Camera and Photo Show, North Miami Armory, 13250 NE 8th Ave. Contact Florida Photo Collectors, 8930 State Road 84 Suite 170, Ft. Lauderdale, FL 33318, (212) 595-2466.

February 12 (CA)
Hayward Camera Show & Sale (see December 4).

February 12 (NJ)
Second Sunday Camera Show (see December 11).

February 19 (Germany)
Stuttgarter Photo-Boerse (photo show & sale), Schwabenlandhalle D-70734 Fellbach/Stuttgart. Contact Axel M. Bretzler, Schumannstr 22, D-71034, Boeblingen, Germany. Call 49-7031-67-1988.

HC WHITE VIEWS

Circa 1907. 100 cards per box. China, Japan, Italy, England, Canada, Palestine, Switzerland, Ceylon/Burma, etc. for a total of 1186 views.

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250 views from 1976-1980.

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Letters *(Continued from page 2*

seven dollars a roll. Of course I could get amateur films from the same store for less but the film and processing are the single cheapest part of the hobby and considering the time I spend trying to take a decent picture the quality of the film is one variable that I would rather not have to worry about.

If you have problems getting a steady supply of reversal film the solution is to buy it from a professional supply house, either local or mail order, and then refrigerate the film until needed. If the film is not going to be used for six months or so, stick it in the freezer. Refrigerated film must first be taken out of the refrigerator and left for an hour or two to come up to room temperature before the package is opened so condensation does not form on the film. After shooting, if the film is not going to be developed right away, put it back in the fridge.

Joel Moskowitz
New York, NY

Most amateur E6 transparency films are designed to provide high contrast, saturated colors (as are most amateur color negative films) and the results can look terrible when shooting in direct sun or any high contrast lighting situation. At least once, everybody should try a professional film like Ektachrome EPN for slides without exaggerated color and Kodak Vericolor VPS for better prints from color negative film.

- Ed.

Editor's View

(Continued from page 2

reproduction and the exploding interest in free viewing thanks to Single-Image Stereograms, the smaller format may have more than ever going for it in the tradeoffs between full view vs. reduced reproduction.

There a number of views in the book that have also appeared at one time or another in *Stereo World,* providing a good opportunity to compare the two reproduction sizes. But even the strongest feelings against reducing views don't provide a reason to avoid this book. There are some fascinating images here that you almost certainly have never seen, along with details of California history that you quite probably have never read. It's a lot like reading a whole series of excellent *Stereo World* feature articles that have never appeared (not yet anyway) in the magazine. It points the way for future books from mainstream publishers covering other states or regions "in depth." What could discourage some people new to stereoviews far more than the reduced view size is the need to constantly bend the provided "Stereopticon 707" plastic viewer back into shape. Taylor-Merchant used to make these out of thick, stable cardboard. The new self-warping version will either turn people off on 3-D or encourage them to learn free viewing.

PRECISION FOLDING STEREO VIEWER

For all standard Realist 3D stereo slides. Glass or cardboard mounted. Folds flat, weighs only 1 oz.

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- ☐ U.S. membership mailed first class for faster delivery ($32).
- ☐ Foreign membership mailed surface rate, and first class to Canada ($34).
- ☐ Foreign membership mailed international airmail ($48).
- ☐ Send a sample copy ($5.50).

Please make checks payable to the National Stereoscopic Association. Foreign members please remit in U.S. dollars with a Canadian Postal Money order, an International Money Order, or a foreign bank draft on a U.S. bank.

Name

Address

City State Zip

NSA National Stereoscopic Association

PO Box 14801, Columbus, OH 43214

The Only National Organization Devoted Exclusively To Stereo Photography, Stereoviews, and 3-D Imaging Techniques.

Hyper-View

The Hyper-View Large Format Stereo Viewer was designed by David Lee and Michael Isenberg to provide the highest quality stereo image currently available.

It accomplishes this by using front-surface mirrors, instead of lenses, allowing the viewer to see a large unobstructed stereo image (up to 11 inches wide, or 22 inches for the pair). Because the Hyper-View Large Format Stereo Viewer allows one to perceive the entire image from the ortho-stereo position, it avoids the distortion and image degradation inherent in lenticular viewers. In addition, it improves on other mirrored stereoscopes by allowing one to get close up to view details as well as to see the entire image at once. (Pictured in Stereo World, July/August 1993, page 13.)

◆ ◆ ◆

The Large Format Stereo Viewer is available from David Lee for $125 (plus tax for California residents). Call or write for further information.

◆ ◆ ◆

Also available from Hyper-View:

◆ Stereo images by David Lee and Michael Isenberg (formats include Holmes stereo cards, Realist or 2 x 2 slides, or prints for the Large Format Viewer). ◆

◆ Custom printing of your stereo images from negatives to Holmes stereo cards, slides, or large prints for the Large Format Viewer (black/white or color). ◆

◆ Consultation on viewing and mounting techniques. ◆

David Lee
1112 Santa Barbara Ct.
Sacramento, CA 95816
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(209) 527-7593

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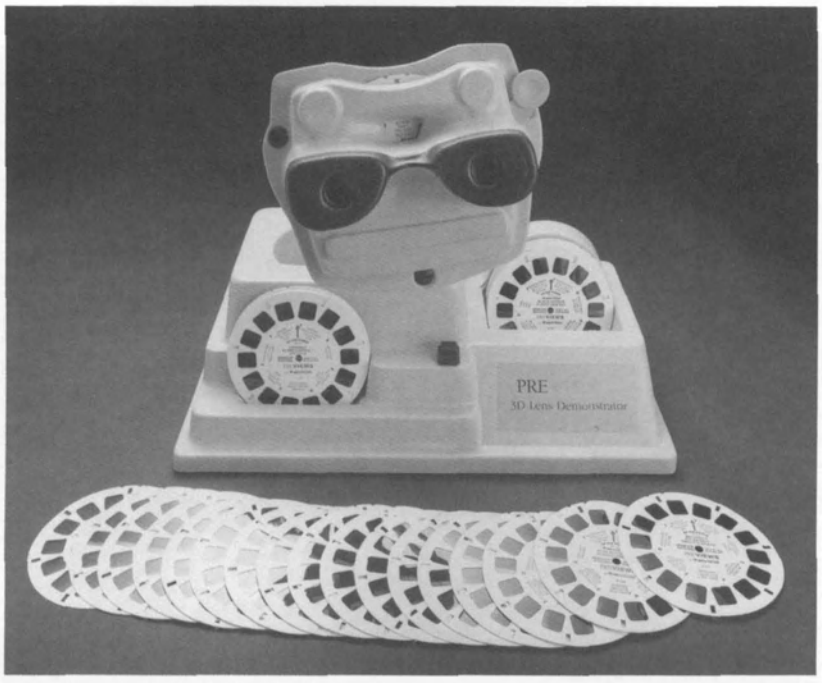
Illuminated 3-D Viewer



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Includes low voltage transformer

Kydex housing

Reviewed in SW 7/93

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Berkshire Knitting Mills No. 23, "Dyeing Silk Stockings" is from an early 1920s set stereographed for the company by Professor A. Krauth. Several more views from the set illustrate William Brey's feature on the history of Berkshire Mills, *TWO MEN OF VISION on page 17.*